



Ehrgott & Forbringer, Lith. Ctr. O.

Johnking
"

THE
AMERICAN
FAMILY PHYSICIAN;

OR,

DOMESTIC GUIDE TO HEALTH.

FOR THE USE OF PHYSICIANS, FAMILIES, PLANTATIONS,
SHIPS, TRAVELERS, ETC.

BY

JOHN KING, M. D.,

PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN, IN THE ECLECTIC COLLEGE OF
MEDICINE, CINCINNATI; FORMERLY PROFESSOR OF MATERIA MEDICA, THERAPEUTICS,
AND MEDICAL JURISPRUDENCE IN THE MEMPHIS INSTITUTE; AUTHOR OF
THE AMERICAN ECLECTIC DISPENSATORY, THE AMERICAN ECLECTIC
OBSTETRICS, ETC., ETC., ETC.

CINCINNATI:

LONGLEY BROTHERS, PUBLISHERS.


1858.

Entered according to Act of Congress, in the year 1857, by

LONGLEY BROTHERS,

In the Clerk's Office of the District Court for the Southern District of Ohio.

TO
THE AMERICAN PEOPLE,
THIS VOLUME
IS MOST RESPECTFULLY INSCRIBED,
BY THE AUTHOR



Digitized by the Internet Archive
in 2013

PREFACE.

IN presenting this work to the public, it will be proper to remark that it is not designed to supersede the attendance of a physician in cases of disease, nor to make skilful practitioners of non-medical persons. A successful treatment of all the various ills to "which flesh is heir," can only be obtained by a correct medical education,—a long and close study of the various departments of medical science, as, Anatomy, Physiology, Materia Medica, Chemistry, &c., together with actual practical experience. Such knowledge and skill belongs only to the correctly educated physician, to whom it will always be found the most prudent and safest course to apply, whenever the symptoms of disease manifest themselves.

Knowing the dangers to which the sick are exposed, when treated by persons not thoroughly conversant with medical science, the educated physician is usually opposed to the dissemination of popular works which instruct the people how to practice medicine, not because he desires to have them ignorant of such matters, but because he is aware that more evil than benefit is apt to follow the practice of even professing practitioners whose medical information is very limited.

Dr. Richard Reece says, "It is the interest of inexperienced and sordid physicians, that an utter ignorance should prevail in regard to medicine, and he who dares to diffuse a knowledge of it is sure to be visited with the full measure of their wrath and indignation." This remark is undoubtedly true, but is incorrect when applied to

(v)

the liberal and unprejudiced physician, who is aware that the more the public know of the organization of the human system, its various functions, the causes of its impairment, as well as the means to repair it,—the better will it be for him, because this knowledge, even limited as it may be, will aid in enabling the public “to distinguish the man of merit from the pretender.”

But, independently of all other reasons for or against popular medical literature, there are very frequently circumstances under which individuals may be placed, in which the possession of a work, written in plain language, with plain directions, may be the means of saving, not only health, but even life. Thus, how often does it happen that a farmer becomes suddenly attacked with disease, or disabled by accident, in which delay would prove dangerous. A physician is sent for in haste, he resides many miles distant, and cannot be had for hours, perhaps days. If, however, a “Domestic Guide to Health” is at hand, the friends may refer to its pages, pursue the measures therein recommended, and not only save the patient much distress and suffering until the arrival of the physician, but, perhaps, save his life. One life thus preserved, is a sufficient reason for the publication of a popular medical work. Beside, it is generally the case that although persons may undertake the management of minor maladies according to the book in their possession, it is rarely the case that they are disposed to trust themselves in the more severe forms when the professional services of a physician can be had. In country places, and on plantations, patients are frequently lost, because the services of a physician cannot be procured in time; and at sea it is still worse, for weeks and even months may pass without the attendance of a medical man.

For the purpose of meeting these emergencies, this work is more especially prepared, and, as the title imports, is arranged to meet the wants of the Physician, Families, and those residing on plantations, or traveling by sea or land.

In the Introduction will be found valuable instructions for the

promotion of health and longevity by hygienical and dietetical measures.

Part I., treats upon febrile, inflammatory, eruptive, dropsical, nervous, cutaneous, and urinary diseases; bleedings from various organs; constitutional diseases, and diseases of women and children, together with some practical observations in relation to pregnant and lying-in women, newly born infants, &c.; the treatment being the result of an extensive and successful practice for the last twenty-five years. A considerable portion of this part of the work will be found occupied with a description of chronic diseases, and the treatment which the author has found the most efficacious.

Part II., comprises surgical diseases and their management; as wounds, fractures, dislocations, ulcers, &c.

Part III., contains a description of the several medicinal agents used in medicine; their actions upon the system; the diseases in which they may be employed, and their doses; together with a Pharmacy, giving the formula for preparing all the compound preparations named in the work. The whole work is written in a concise and intelligible style, so as to be easily comprehended, being divested as much as possible of technical terms; and when these have been necessarily introduced, they will be found explained in the Glossary.

Part IV., on Hydropathic Appliances, is from the pen of Dr. W. S. Bush, a successful Hydropathic practitioner, to whom I take this opportunity of expressing my thanks.

A copious Index closes the work. To say more concerning it would be useless,—its pages must speak for itself.

In the preparation of the book, more especially that part of it devoted to the description of disease, and the method of discriminating its various forms, several excellent works have been consulted, and as the authors are not always quoted from whom considerable valuable matter has been derived, I would particularly call attention at this place, and acknowledge my indebtedness for

such matter, to Thomas' Modern Practice of Physic, Green on Diseases of the Skin, Cazenave & Schedel's Synopsis of Cutaneous Diseases, Household Surgery, by J. F. South, M. D., Thomson's Management of the Sick Room, Savory's Compendium of Domestic Medicine, Planter's Guide and Family Book of Medicine, by J. H. Simons, M. D., Churchill on Diseases of Women, Castle's Manual of Surgery, Churchill on Diseases of Children, Pereira's Materia Medica, Christison's Dispensatory, Coxe's Dispensatory, Hooper's Medical Dictionary, Cooper's Surgical Dictionary, Hoblyn's Dictionary of Medical Terms, Pronouncing Medical Lexicon by C. H. Cleaveland, M. D., &c.

J. K.



HEALTH AND DISEASE.

THE AMERICAN FAMILY PHYSICIAN.

INTRODUCTORY REMARKS.

CHAPTER I.

Temperaments.—Air.—Ventilation.

HEALTH is the greatest earthly blessing which man can enjoy; without it, life is but a state of suffering and torment; with it, the comforts and happiness of the human family are preserved and perfected. Yet, however necessary health may be to our welfare, it is one of those subjects, which, as a general rule, receive but a small share of attention; and while the means necessary to promote health and longevity are seldom considered in an important light, those which tend to impair it and lessen the term of life, are by the majority of mankind almost worshipped. Hence, although when situated under the best circumstances, man is liable to sickness and death, yet the great majority of diseases, indeed I believe I may truly say at least seven-tenths of the physical sufferings of the human family, are caused by inattention to those few and simple measures, which observation and experience have proved to be the only true and never-failing sources of sound, vigorous, and permanent sanity.

The human body is composed of various tissues and organs, each having separate and distinct duties, yet which are so harmoniously blended together, and at the same time so dependent upon each other, that an interference with the operations of one necessarily impairs the integrity of all the others, in proportion to the extent and degree of the intrusion. When the structure of these organs is perfect and well developed, being neither too largely nor too deficiently proportioned, and their various functions are executed with proper activity and regularity, without producing mental or physical suffering, or in any way diminishing or exalting the various capacities of the individual, a state of *health* is said to exist, and a departure from these conditions constitutes *disease*.

Before entering into an explanation of the various forms in which disease may present itself, and the treatment adapted to them, it will be proper in a work intended for popular use, to refer to those several circumstances, on the proper supervision of which, health and life are entirely dependent. These are chiefly air, food, clothing and exercise, together with the regulation of sleep, the natural evacuations, and the mental passions. By an attention to them, individuals who naturally possess strong and healthy constitutions, may preserve them uninjured even to advanced age; and those who are diseased, or predisposed to disease, either from their own imprudences, or from the sins of their progenitors, may arrest its advance for a longer or a shorter period, and frequently remove it altogether.

A neglect of those laws upon which animal life is dependent, will most inevitably produce its lamentable results either upon the careless and disobedient individual himself, or upon his offspring; and it is the moral and religious duty of every member of the human family, imperatively to cultivate an attention to those laws so intimately connected with the welfare and happiness of community. It is a duty we owe to our Creator, to our fellow beings, to ourselves, and especially to our offspring,—for no one is justified in doing that which shall entail suffering and disease upon others. He, therefore, who violates the laws of his existence by a careless observance of the means required to preserve and protect it in its greatest degree of integrity, and who thereby not only impairs his own constitution, but gives rise to a deteriorated and unhealthy offspring, is guilty of the worst crime which can be committed against God, society, and his wretched descendants. It is thus that “visiting the iniquity of the fathers upon the children, and upon the children’s children, unto the third and fourth generation,” is effected and perpetuated.

Several marked differences are observed between the constitutions of the members of the human race, so that these may be classified, each class exhibiting certain peculiarities common to itself. These are called *temperaments*, a correct knowledge of which will be found of much importance in the preservation of health and removal of disease. Various views of the temperaments have been published to the world, but those of Prof. J. R. Buchanan appear to me to come nearer the truth than any others which I have examined. In a brief article upon this subject, he observes:—

“The study of the temperaments, which is highly important and interesting to medical men, has not, heretofore, assumed a strictly scientific character. Two leading doctrines have been presented, neither of which is entirely comprehensive or philosophical. 1st. The doctrine of the ancients, which recognized Sanguine, Bilious, Nervous, and Lymphatic or Phlegmatic temperaments—a classification based upon the supposed properties of the fluids of the body. 2d. The classification of Dr. Thomas of Paris, and Dr. Caldwell of America, based upon the solids instead of the fluids, which recognizes the Cephalic, Thoracic, Abdominal, and Muscular temperaments, framed upon the comparative development of the cranium, thorax, abdomen, and limbs or general muscular system.

Each arrangement is convenient and instructive, but neither presents a full view of the subject. The ancient classification, though practically convenient, is not philosophically well based in the doctrine of the fluids. A plethoric abundance of blood does not produce the characteristics of the so-called Sanguine temperament, nor will a large liver, and abundant secretion of bile, produce the so-called Bilious temperament, but rather the reverse.

The doctrine of Thomas and Caldwell, is more philosophical, as it is undoubtedly true that every large organ by its predominant influence modifies the character of the entire constitution. In accordance with this principle, the CEPHALIC temperament characterized by a predominant development of the brain, is a temperament of mild character, in which animal impulse is overruled by the higher sentiments and human faculties. This temperament in perfection is tranquil, intellectual, moderately excitable, and never violent. Unless combined with a liberal share of the muscular temperament, it manifests a tendency to tuberculous disease and general debility.

The disorders of this temperament are not very violent in their character, but are quite liable to assume a typhoid aspect. Bloodletting and profuse evacuations are peculiarly objectionable, as there is not the necessary vital force to recover from prostration.

The MUSCULAR temperament, characterized by large limbs and powerful muscles, is a temperament of great vital force and endurance; scarcely ever attacked by tuberculous or scrofulous diseases, but quite liable to rheumatism and inflammatory fevers with but little tendency to sink into the typhoid state.

The ABDOMINAL temperament is characterized by general inefficiency and relaxation, and constitutes the lowest grade of humanity.

The THORACIC temperament, indicated by a large thorax, including a large development of lungs and heart, is the most harmonious and active of these temperaments, indicating, as it does, active circulation and aeration of the blood, thereby producing general activity of mind and body.

This temperament presents active phenomena in disease, responding readily to medicines, especially to stimulants, and is frequently defective in the functions of the abdominal viscera, the appetite and evacuations being moderate. The tendency is to excessive activity.

Of these temperaments, the purely Cephalic is adapted to the life of a sedentary student, but unfit for vigorous action.

The *Cephalo-thoracic* is adapted both to study and to action, but especially to oratory and to social intercourse. Combined with a sufficient amount of the muscular, it produces the best temperament for greatness, adapting its possessor to the noblest achievements, and is also favorable to physical health and harmony.

The pure Thoracic temperament produces active and brilliant qualities, but requires a sufficient amount of the Cephalic, to give wisdom and calmness, and a sufficient amount of the Muscular, to furnish the necessary strength and vital stamina.

The Muscular temperament alone, produces an athletic form and animal coarseness suitable to the prize-fighter, or the mercenary soldier, but unfit for any elevated or refined existence. The proper use of the Muscular temperament is to combine with the higher temperaments, and give them the necessary physical power and vitality. The *Thoracico-muscular* temperament possesses the highest degree of activity and force which the human constitution can manifest.

The *Musculo-cephalic* temperament is one of great power and intelligence, and endurance, but moderately excitable, resembling very nearly what has been called the Bilious.

The *Musculo-abdominal* temperament is coarse, sluggish, and powerful when roused. The character is gross, sensual, passionate, and unrefined. It corresponds with the inferior specimens of what is called the Sanguine-lymphatic.

The *Cephalo-abdominal* temperament is characteristic of infancy, as the brain and abdomen are then relatively large, while the chest and muscles are small. As we advance in life, the Cephalo-abdominal temperament diminishes, and the Thoracico-muscular increases, the chest and muscles of the adult being much more largely developed in proportion, than those of the infant, while the abdominal organs are relatively much smaller. The liver, especially, diminishes in proportional development, and a torpid hepatic condition frequently occurs.

The temperament of woman is intermediate between that of the adult man and that of the infant, having proportionably more than man of the Cephalo-abdominal in comparison with the Thoracic and Muscular.

The old classification of temperaments bears considerable analogy to the foregoing classification, based upon the great regions of the body. The Sanguine temperament resembles in some respects the Thoracic. The Sanguine-bilious resembles mostly the Thoracico-muscular, with a share of the Cephalic. The Nervous temperament resembles somewhat the Cephalo-thoracic, and the Lymphatic temperament the Abdominal or Cephalo-abdominal.

The philosophic propriety of the above fourfold division of temperaments is unquestionable. We may, therefore, recognize Cephalic, Thoracic, Abdominal, and Muscular temperaments, as expressions belonging to the phraseology of positive science. But it may be perceived by the most superficial observer, that no quadruple classification of temperaments corresponds adequately to the immense varieties of constitutions which nature presents. The varied combinations of the elements of the human constitution are infinite in number, and no two individuals ever possessed precisely the same temperament.

The explanation of temperaments must go back to the fundamental elements of the human constitution. It must rest upon the development of the brain, in which we find a representation of all the physiological and psychological forces of man. In a truly philosophic sense, the study of the temperaments is the study of the entire constitution of man.

But as we need for practical purposes a brief and simple view of the subject, we may place the different elements of temperaments in different groups which will present the most prominent facts of the temperamental science.

The old classification of temperaments,—the Sanguine, Bilious, Nervous, and Lymphatic, corresponds to the great natural divisions of the human brain, sufficiently near for practical purposes. The Sanguine temperament, recognized by vigorous physical development, active circulation, passions, and appetites, with a moderate degree of perseverance, intensity, and depth of character, and a complexion generally somewhat florid, requires for its manifestation a good share of the basilar organs.

The Bilious temperament, indicated by firmer fiber, and more rugged outlines, with greater hardihood, perseverance, and moral strength of character, depends upon the upper occipital region.

The Nervous Temperament, presenting delicacy of fiber and complexion, ready intelligence, quick, excitable emotions and passions, with but moderate intensity and violence, is indicated by the development of the frontal and lateral regions of the head, which produce a quick, intelligent, sensitive, excitable, and rather unreliable character.

The Lymphatic temperament is produced by the development of the frontal half of the head generally, excepting the regions appropriated to the Nervous temperament.

The moral, calm and prudential regions lying above, between the frontal and occipital organs, produce general calmness and contentment, while the anterior portion of the middle lobe containing the organs of Indolence and Relaxation contributes largely to the languid character of the Lymphatic temperaments.

According to these locations, therefore, we have two forms of the Lymphatic temperament; the higher Lymphatic corresponding with the Cephalic, and the lower Lymphatic corresponding with the Abdominal. The Lymphatic temperament, therefore, in the aggregate may be considered equivalent to the Cephalo-abdominal.

In the application of the foregoing principles, the relative development of the great regions of the head materially assists in the study of the temperaments. If the physical constitution always corresponded to our natural character and tendencies, the development of the brain would be, in all cases, a true indication of the temperament; but, as our modes of life and circumstances are often widely different from our natural inclinations and capacities, it is necessary to look to the general appearance and constitution, as well as to the cerebral development."

AIR.—Our earth is surrounded by a peculiar transparent, elastic, compressible, and invisible fluid, called *air*, or *atmosphere*, the condition of which has a powerful influence in promoting health, or in inducing disease. This fluid exerts a pressure of nearly fifteen pounds to every square inch at the surface of the earth, but which pressure diminishes, as well as the density of the air, in proportion to its distance above the surface. It is a

compound substance, consisting of *oxygen*, *azote* or *nitrogen*, *carbonic acid gas*, *ammonia*, and *aqueous vapor*. The constituent of air which is necessary to respiration and health, is *oxygen*; the *azote* or *mephitic air*, and the *carbonic acid gas*, are both unfit for respiration or combustion, and will speedily destroy life when inhaled. In consequence of these facts, oxygen is frequently termed *vital air*.

The distribution of *oxygen* throughout nature is absolutely necessary for the existence of organic bodies; and the proportion of it which the atmosphere contains is just that required for the preservation of all living animals and plants. An excess of this gas, however, in the atmosphere will sustain life for a longer period than ordinary air; while a diminished proportion is prejudicial to health.

The atmosphere consists of oxygen twenty-three, and nitrogen seventy-seven parts, by weight; or twenty parts of the former, and eighty of the latter, by volume. The *carbonic acid gas* is not necessarily a constituent of air, but originates from various sources, as, from the respiration of men and animals, combustion of various substances, putrefactive action, &c.; there are from one to one and a half parts of it in every two hundred and fifty of atmosphere, and it exists more largely in the air of cities than in that of the open country, which explains why persons in cities feel more low spirited and languid during a hot season, than those in the country at the same degree of temperature, and also, why disease and death are more common among the former. Carbonic acid gas is a highly deleterious agent; one per cent. of it existing in the atmosphere, is sufficient to cause headache, weariness, drowsiness, &c., and twelve per cent. will occasion death. The *ammonia* found in the atmosphere is in very minute quantity, and is more readily detected after a thunder storm; and the *moisture* varies considerably in quantity from time to time, even in the same localities.

Oxygen is that constituent of the air upon which health and life depend; in the performance of respiration it is inhaled into the lungs, enters into the circulation, and aids in the destruction of all those matters which are dangerous to the animal economy. A healthy man will inhale about two hundred and sixty-six cubic feet of air in the course of twenty-four hours, of which from twenty-five to thirty-seven ounces consist of oxygen; and while this is being inhaled, an exhalation of from ten to fifteen feet of carbonic acid gas ensues, or from eight to ten ounces, by weight. The quantity of carbonic acid gas passed off is proportioned to the amount of oxygen inhaled, so that when there is a deficiency of oxygen, there is also a retention of carbonic acid in the system, which will invariably produce disease. The decomposing influence of oxygen upon the effete matters of the system gives rise to various results; thus the blood which is conveyed to the lungs through the veins is dark-colored and filled with impurities, but as soon as the oxygen has come into contact with it, these impurities are destroyed, or disintegrated and passed off, and the blood becomes of a bright red color and highly purified. Nine pints of pure atmosphere will purify four pints of blood, imparting to it a power which gives heat and activity to the whole

system. Some idea of this vital process may be had, when it is stated that about nine pounds of blood are presented to the atmosphere in the lungs for oxygenization, every minute, or about 12,960 pounds in twenty-four hours. The quantity of blood estimated in the adult system, is about twenty-eight pounds, which performs its revolution in two minutes and a half; or, in other words, the circulating velocity of this fluid is so great that any given amount, on leaving the lungs, is distributed to impart heat, health, and activity to the system, as well as to remove impurities, and in the short space of two minutes and a half it returns again to the lungs, laden with these impurities, having effectually accomplished its vital mission.

All living creatures must breathe oxygen, or death will speedily and inevitably take place. Fresh, unadulterated air, holding about twenty-one per cent. of oxygen, is as essential to the proper vitalization of the blood, and to the healthy action of the lungs, as well as all other organs, as is good, wholesome, and nutritious food to the formation of healthy chyle, and the normal action of the digestive organs. From these facts it is very evident, that the inspiration of air holding a diminished amount of oxygen, or containing foreign noxious substances, must be detrimental to health and longevity in proportion as its purity is departed from. And the influence of the condition of the atmosphere upon the system, is well known by those who have felt the refreshing and exhilarating effects, so instantaneously occurring upon passing from a deteriorated city atmosphere to the pure, unvitiated air of an open country; while, on the other hand, but few country people prefer a residence in cities, from the depressing and unpleasant sensations experienced almost as soon as they begin to breathe the contaminated atmosphere of such places. Again, although persons in the enjoyment of vigorous health may not observe the various changes which occur in the atmosphere, from time to time, yet they are always noticed and sensibly felt by the invalid.

As one great means, therefore, conducive to health and longevity, it is highly important that individuals should be extremely careful how they expose themselves to the influences of unhealthy air; on this point too much attention cannot be bestowed. Statistics prove beyond a doubt, that the extension of typhus, cholera, and other fatal forms of disease, is greatly promoted by the vitiated air of low and damp situations, and the virulence of these maladies is still further augmented when, in addition, the unhealthy animal exhalations which are continually passing off from the body, are allowed to circulate through the atmosphere, as may be witnessed in hospitals and other places where individuals are congregated together in small apartments, imperfectly ventilated. Animals which are kept in low, damp places, and fed upon bad food, will have tubercles developed in some part of their systems; and we find scrofula to abound among the inhabitants of damp and close situations, whose diet is of an unwholesome and innutritious character. Individuals are very apt to imagine that because they do not immediately experience the evil effects resulting from

an inattention to the laws of health, that, therefore, they can continue their aggressions with impunity; but all must remember that the mischievous consequences proceed slowly or rapidly, according to the condition of the constitution, and the character of the exposure, and that sooner or later they will suffer the inevitable punishment of their folly and disregard, by the appearance of some form of disease which will not only interfere with the proper enjoyments of life, but will tend, likewise, to more or less speedily terminate that life. More than one-half of the numerous invalids who have applied to me for relief, were made so by an inattention to the laws of health, as, breathing an impure air, eating improper food, the sedentary occupation of hot rooms, uncleanness, intemperance, &c., and more commonly, by being exposed to one or several of these noxious influences during the period of growth.

All places where individuals congregate together in numbers, as churches, theatres, ball-rooms, &c., should be so arranged that there may be kept up a constant circulation of fresh air, and to effect this there are no better ventilators than large doors and windows; the various plans of ventilation by other means, are of but little service in large and crowded assemblies. The air of such places is vitiated by the enormous consumption of oxygen, and the augmented quantity of carbonic acid exhaled and diffused throughout the atmosphere of the room. It is calculated that one thousand persons will, in one hour, consume four thousand hogsheads of air; so that in crowded assemblies we soon have the evil effects of an air exhausted of its normal proportion of oxygen, and poisoned by the exhalations from the lungs and skin, as well as by fires and light when these are used. And the depressing sensations, the headaches, the faintings, &c., which occur in crowded places are not owing, as is generally supposed, to the heat, but to the inspiration of impure air. All rooms, whether private or public, should be well ventilated daily; and the apartments of the sick should, especially, be furnished with a constant access of fresh air,—it is more refreshing, more reviving, and more beneficial to them, than all the medicines which may be prescribed for them without an attention to this point. Yet the doors and windows are not to be opened at random,—some prudence must be observed, that the patient be not exposed to a current or draught of air, so as to expose him to any dangers, and much benefit will accrue by frequently sprinkling through the room and over the bed, some vinegar or other vegetable acid; and, in the case of epidemic or contagious diseases, some acid thrown upon chloride of lime, or chloride of soda, will, by disengaging chlorine vapors, tend much to purify the atmosphere.

The management of schools at the present time is extremely prejudicial to the health of the rising generation; yet parents appear to act in this matter as though education was everything and health nothing—as if they were perfectly contented, so they were free from the rearing and governing of their children at home, resting perfectly satisfied to trust the health, happiness, and lives of their offspring to any one bearing the name of “teacher,” without investigating his capabilities, their only desire being, apparently,

a freedom from the responsibilities of training noisy, boisterous, and troublesome boys and girls. Children should never be sent to school until they have reached their seventh or eighth year; their brains and nervous systems are too immature previous to this age, too susceptible, and too easily acted upon by extraneous influences, to be exposed to the horrible torture of sitting silently for hours in a close, crowded room, under the surveillance of a dreaded master, who, to please the parents and enjoy the reputation of being a good teacher, is tasking their little tender brains to the utmost limit. No wonder children hate school, hate teacher; no wonder that intelligent infant scholars, have their brains so injured as to make dull men—no wonder that an immense amount of children die yearly from this neglect of physical cultivation.

Children need exercise and pure air, not only exercise of the muscles but of the lungs—rheumatism, bronchitis, laryngitis, consumption, liver affections, are traceable, in six cases out of ten, to the unnatural, unscientific, and tyrannical modes of school government. If it is desired to have intelligent men, possessing minds of strength and activity, an honor to their parents, to themselves, and to their country, cultivate first their physical development. Instead of keeping them in-doors, fashionably dressed, so as to interfere with all natural thought and action, let them run, let them play, let them laugh and scream, for God intended they should do these things. By these means they impart strength and vigor to their muscles, to their nerves, to their lungs, to their brains, and when at their seventh or eighth year, they are for the first time placed in a properly conducted school, the parent will in a short time find himself amply repaid for all his apparent previous neglect of his child's education, and that, too, without any impairment of that child's health. Parents look to this, for teachers will not change their course, nor abate one whit of authority, until you require it of them. It would be, however, ungenerous to rank all teachers in the above category. I am pleased to say I know many, who deeply feel the truth of what I have been stating, but cannot put their sanative views into operation, because many foolish and ignorant parents will not permit it.

School-rooms should be kept clean and well ventilated, and instead of allowing the children but one intermission in the morning, and one in the afternoon session, they should be required to perform some exercise, if only of five minutes duration, at least every hour, or after every lesson; indeed, previous to engaging in each new lesson, or department of study, as from reading to spelling, from this to history, from this to writing, &c., a short time should be devoted to some physical exercise which will not only give relief, both mentally and physically, but will cause an increased amount of air to be inhaled, and thus invigorate the whole system. And the pernicious course of making children sit erect for hours with their arms folded across their breasts, should be discountenanced by every parent and teacher; if their arms must be folded, always have them across the back, which will assist in expanding the muscles of the chest,

and preventing "round shoulders." These remarks are equally applicable to the management of girls as well as boys. The error of a mode of education, the most essential object of which is, to *keep children still*, must be apparent to every observing mind.

Impure air is also occasioned by burning lamps with long wicks, which, saturating the atmosphere of a room with smoke, renders it very detrimental to health. The burning of fuel of any kind, also vitiates the air of an apartment, more especially if a stove be used for this purpose; and all rooms containing fires should be ventilated twice a day, by opening the doors and windows, and permitting a fresh current of air to pass through. Charcoal should never be burned in a close apartment, and particularly in a bedroom, the vapors of carbonic acid gas to which its combustion gives rise, soon fill the room, and occasion fatal results; many deaths are on record, which were caused by an ignorance of this fact. Sleeping apartments should be aired regularly, and, it is better that fires should never be kept in them, especially during sleeping hours; but when fires are kept up during the night, some means should be devised by which fresh air may have constant access to the room, except when the house is in the neighborhood of a low marsh, or a lake or pond of stagnant water; in which case, means should be employed to screen one's self from the influence of their damp and noxious exhalations. It is a very pernicious course to place many persons in one sleeping apartment, and if persisted in, the occupants will sooner or later suffer from disease; much of the danger may be obviated by allowing a free circulation of pure air through the room during the night. Beds should frequently be exposed to the action of the open air at mid-day. Plants generally give off oxygen through the day, and carbonic acid during the night, at the same time imbibing the oxygen; hence, it is a dangerous and unwise practice to keep plants, flowers, &c., in the apartment devoted to sleeping.

Cellars, wells, mines, the holds of vessels, and places of similar character, in which the air has been long confined, frequently contain large quantities of carbonic acid gas, which is immediately destructive to all who imprudently enter and inhale the poisonous gas. Such places should never be entered by any one, until it has been first ascertained if combustion can be supported; this may be accomplished by letting down, or introducing a lighted candle within the cavity or place to be entered, and observing whether it burns or not—if it continues to burn brightly, there is no danger, but if it burns dimly, or the flame is extinguished, instantaneous death would happen to whoever ventured within. The introduction of slaked lime into such places will speedily render the air pure and capable of sustaining animal life, because the carbonic acid gas having a chemical affinity for the lime, unites with it, forming a carbonate of lime, and the pure air rushes in to supply the absence of this gas. Ammoniacal water will also effect a similar result, the carbonic acid uniting with it to form a carbonate of ammonia.

All apartments in which crowds assemble very often, and the holds of vessels, should be cleansed and white-washed frequently; or, if white-

washing is not permitted, arrangements should be made by which slaked lime can be kept in various parts of the rooms, and which should be freshly renewed immediately previous to each meeting. Damp cellars should be carefully attended to, especially in hot weather; they should be kept clean, ventilated often, and be sprinkled every week or two with unslaked lime. I have known severe attacks of disease to occur in houses, where, although cleanliness was bestowed upon all that portion above the cellar, this was permitted to remain damp, and accumulate foul and noxious vapors, which originated the attacks referred to. Rooms under ground are always improper places of residence, whether they be used as kitchens, offices, workshops, or as sleeping rooms, and should positively be prohibited by law. But some legislators, as with some parents, pay little attention to the laws of health, and more to the enactment of laws to favor wealth, luxury, and other matters calculated to destroy health, enfeeble the mind, and shorten the duration of life. During the hot summer months, accumulations of filth in cellars, rooms, or about houses, or in the public streets, should not be permitted, and where they exist, they should be immediately removed, and the places at which they were collected purified by sprinkling with lime. Frequent cleaning and white-washing fences, out-houses, and yards, will be found conducive to health, and will abundantly repay the labor thus bestowed.

The vapor of sinks or privies is extremely disagreeable and unhealthy, and in warm weather, means should be taken to decompose it. This gas is a combination of sulphur and hydrogen, and is called sulphuretted hydrogen, or sulphydric acid, and blackens silver, copper, tin, &c., with which it comes in contact, forming sulphurets of these various metals. Ammoniacal vapor often exists with it, being evolved in the decomposition of urine. Sulphydric acid is very deleterious to animal life, an atmosphere containing one thousandth of its volume of this acid will kill a dog, and one two hundred and fiftieth will destroy a horse. Six or eight pounds of copperas (the commercial sulphate of iron) thrown into a privy, will suffice to decompose the sulphydric acid, and keep the place free from unpleasant odor for two or three months, and will not cost over thirty cents. Every family in cities should be required to use this agent in their privies, two or three times a year. Prepared Charcoal in powder, but in larger quantity, will have a similar effect. In the selection of a city council Board, or Superintendents of a city, the inhabitants should appoint only those of intelligence and liberality, and whom they know to be acquainted with the laws of hygiene, for it is only by a rigid observance of these laws that the health of a city can be maintained. There are several cities in this country where, from the ignorance of the authorities on these matters, the citizens are not allowed to cast their refuse matter in the street, nor is any course adopted by which they can get rid of it; the consequence is, that they are obliged to have a collection of putrid matter in or around their houses, and which, in warm weather, is sure to generate disease. And as long as the people passively submit to be the servants and subjects of these legislators, they

need not expect much reform on such points. When will the people of a free country learn their true position—that they are the masters—and must have all legislation done correctly, to benefit the mass, and not individuals?

The action of the sun's rays upon the atmosphere of the earth produces a condition favorable to health and animal life—or, in other words, the atmosphere becomes more highly vitalized under the influence of the sun's rays; hence, exercise in the open day air, but not immediately under the intense action of the sun, imparts vigor and energy to the system. My own view of this matter is, that the electrical rays of the sun acting upon the electricity of the earth's atmosphere, impart to it a vivifying and highly invigorating power. But when this influence is withdrawn, as during the night, the temperature of the atmosphere becomes reduced several degrees, dew and moisture is formed and deposited, noxious vapors which were compelled to hide themselves from the presence of the sun, stealthily diffuse themselves, and disease is more readily developed. Hence an exposure to night air is always pernicious, more particularly among those who are laboring under, or are disposed to sickness, as well as among those who imprudently expose themselves to its influences. When it becomes necessary to brave the night air, the person must be properly clothed, according to the season; in intermittent or other epidemic locations, exercise to any great amount should be avoided; great care should be observed never to leave a room, whether private or public, when in a state of perspiration, at least, without the addition of some extra garment to protect the person from the chill air; and while in the open air of night, moderate exercise, as walking or riding, should be taken. Yet, although the night air is less healthy than that of the day, it is much more healthy than the atmosphere of a confined room, in which several individuals have been sleeping, and hence should always be permitted to circulate in such apartments, when there are no contra-indicating circumstances.

The atmosphere in the neighborhood of marshes, or ponds of stagnant water, in consequence of the noxious gases evolved from the decomposition of vegetable matters contained therein, is peculiarly unhealthy, particularly during the latter part of summer and through the autumnal season; and the pernicious results arising therefrom are more marked during the night, from sunset to sunrise. I have not the least doubt, however, that much of the baneful action of marshy emanations, is owing more to the diffusion of microscopic spores of poisonous cryptogamic plants, which are wafted along by the night winds, than to deleterious gases. Wherever there is decomposition of organic matter, there will be found this species of vegetable growth in greater or less abundance; which if not visible to the naked eye, is readily discoverable by the microscope. Hence, it has frequently happened that on opening an old sewer or place of filth, these spores have been conveyed in a course which caused disease on one side of a street, while the opposite side remained healthy. This certainly could not be the case with a gas, which would so diffuse and intermingle itself with the atmosphere, as to affect both sides of a street in a similar manner.

Persons residing in marshy districts usually present undoubted marks of unhealthiness; their countenance is pale or sallow, the limbs and abdomen are frequently bloated, and mental energy is impaired or almost destroyed; they are subject to loss of appetite, indigestion, diarrhea, dysentery, bilious fever, and intermittent fever; and, whatever may be the form of disease under which they labor, one of its most prominent symptoms, is, almost universally, a well-marked periodicity. To preserve perfect health in such locations is almost impossible. The best course for one to pursue, when thus situated, is regularity and temperance in all things; keep the bowels regular, the skin clean, and use a plain, nourishing, but easily digestible diet. The early morning air should be avoided as much as possible, not going out to work or exercise until the atmosphere has experienced the genial influence of the sun's rays, as evidenced by the disappearance of the fog which had been covering the surface of the earth, and then work moderately and without haste. On the setting of the sun, retire within the house, all the rooms of which must have been thoroughly ventilated through the day, and close the doors and windows. In damp weather the sleeping apartments, which should never be upon the ground floor, but in the upper story, must be kept dry by having a fire in them through the day, which should be extinguished on retiring to bed. In the fall of the year, fires built close to the marsh will be found advantageous, not by decomposing any poisonous gas, but by creating a current, which will convey the cryptogamic spores to the flames and thus consume them.

Many persons residing in districts to which epidemics are common, especially fever and ague, are, every spring and fall, in the habit of taking some domestic "tonic bitters" every morning previous to breakfast or going out into the morning air, and I have no doubt of its usefulness; these are usually composed of some simple bitter and stimulating agents combined, as, for instance:—Take of Wild Cherry Tree Bark, Black Cohosh Root, Prickly Ash Bark, Dog Wood Bark, each, in powder, one ounce; Mandrake Root, half an ounce; Cinnamon, Ginger, Cloves, each, two drachms; Capsicum, one drachm; Whisky, four pints. Mix together, and allow the mixture to stand several days, frequently shaking it; the dose is half a wine-glassful every morning. This formula I obtained from a farmer residing in a section of country in which fever and ague is common, who assured me that by using it every fall and spring, his family and laborers were not so liable to "take the chills," as in seasons when its use was neglected. I knew two planters in Mississippi, who, while their neighbors lost a great number of their blacks by a severe form of bilious fever prevailing at the time, so managed their own servants, as to lose very few. This was effected by allowing them every morning, before they started for their work, a cup of coffee and some bread. And a similar course pursued in all marshy countries, or locations where epidemics are common, among those who are obliged to commence labor at early dawn, would undoubtedly be found advantageous. These means, beside the stimulus they afford, aid in preserving the bitter principle of the bile, which imparts to the system a

power of resisting the approach of the above forms of disease. A residence by the sea-side, or an exposure to the sea-air is beneficial to all healthy persons, and the majority of invalids. This air contains a purity and sharpness not to be met with elsewhere, and is especially adapted to patients laboring under forms of disease attributable to the influence of noxious vapors. Scrofula, rickets, chlorosis, many nervous affections, &c., may be materially benefited by frequent sea-bathing and a continued exposure to the influence of sea-air, particularly in situations where the climate is mild and equable; but, as in other instances, cold, damp weather, or sudden changes must be avoided. Many diseases are benefited or cured by a sea-voyage; this is owing partly to the purity of the air, and partly to the shock experienced by the system from sea-sickness, together with the change of diet, scene, occupation, and the new mental excitement.

There is a peculiar substance, found by Schönbein to exist in the atmosphere, under certain circumstances, to which the name of *ozone* has been given. It is the most energetic oxidizing substance known, as well as the most effective bleaching principle. In consequence of these properties it acts as a potent disinfectant, consuming the unhealthy emanations which float throughout the air. It is said to be present in the greatest abundance in winter when snow is on the ground; also in open country places, especially those along the sea-coast; as well as directly following a thunder storm. When absent, or deficient in quantity, fatal forms of disease manifest themselves; it was said to be absent especially during the seasons of Asiatic Cholera. When phosphorus is exposed to the action of moist air, ozone may be observed; also, in the spark obtained from the electric machine. Those who wish to discover its presence in the air, may accomplish it by the following means: To fifty grains of distilled water, add five grains of starch, and half a grain of iodide of potassium; moisten a piece of paper with this solution, and dry it. When required for use, moisten the paper with water and expose it to the air; if ozone be present, the paper will become blue, the depth of the color denoting the proportion contained in the atmosphere.

CHAPTER II.

Food.—General Rules for Diet.—Quantity of Food.—Quality of Food.—Meals.—Condiments.—Mastication.—Attentions to the Teeth.—Modes of Cooking.

FOOD or aliment is necessary for the existence of all organized beings, but the requisite quantity and quality depends very much upon the circumstances connected with each individual case. Thus, some live entirely

upon a vegetable diet, and enjoy excellent health; while with others, a portion of animal food is actually necessary. When I was a young man, I followed a strictly vegetable diet for three years, at which time I became attacked with a scorbutic disease which resisted the various remedies prescribed for its removal; by the advice of an old physician I resumed the use of animal food, and the disease left me in a few weeks. I have met with many other individuals upon whom a strictly vegetable diet produced similar influences.

General rules for diet are all that can be given, each individual must make an application of them to himself; for it will be found that many articles viewed and recommended as healthy and nutritious, will produce with some persons much distress, while others can use them with benefit—that one stomach will bear almost anything with impunity, while with another, great care must be observed in selecting suitable food for it to digest. Hence, the necessity of every person being thoroughly acquainted with his own peculiarities in this respect. I am acquainted with a gentleman with whose stomach every article of diet agrees, save custard; the instant the first teaspoonful reaches his stomach, he is attacked with a diarrhea, which almost always requires medical aid before it can be removed. This has proved a source of much annoyance to him, especially at times when away from home, and when in a moment of forgetfulness he has taken a spoonful of this article, which invariably requires him to leave the table immediately.

An author justly remarks, “almost any common food is wholesome to a temperate man, who preserves his body and his mind in an active but not hurried state; for thus he ventilates and purifies his blood, and brings every fiber of his frame into the best condition for the proper enjoyment and use of life. It is astonishing how much the health is often improved by thinking nothing about it, but just going about one’s business, and using the common means of subsistence under the guidance of common sense and a good conscience. But mere ignorance cannot do this, and we must be able to consider before we can reasonably do our duty. Even savages have their rules of health, and no one has ever reached a hale old age without due attention to exercise, air, temperature, rest, and diet. Although the dieting of soldiers and sailors may prove what is the average requirement in respect to food by persons laboriously employed, yet this average itself indicates that nature is very accommodating, or such a variety of constitutions could not all be treated in the same manner. Positive rules for the direction of appetite are not consistent with nature, and every one who possesses reason will ordinarily find a better guide in his own discretion and good sense than in any dietary that the doctor can direct.”

In partaking of food, much will depend upon the appetite; if this be healthy or natural, a proper amount of aliment will refresh and invigorate the system; if it be artificial, that is, excited by stimulants of various kinds, not only will the stomach be seriously injured, but irreparable mischief will frequently be done to the system. Some persons form an appetite of

habit, that is, accustoming themselves to eat at certain hours, whether the food is required or not, and often without any relish for it; such individuals, as well as those who take food without an appetite, are very apt to be complaining that "food does not seem to do them any good," as well as to be laboring under a host of disagreeable symptoms, which speedily destroy health and life.

Food taken into the stomach from an artificial appetite, is always imperfectly digested, and must, as an inevitable consequence, produce disease, if such a course be persisted in; for as soon as the influence of the stimulus has passed, the stomach returns to its original torpid condition, and instead of the food being digested, it decomposes and putrefies, and passes out of the stomach in a condition calculated to create disease and shorten life. I have observed among my own acquaintances, that of those who were in the habit of provoking their appetites by stimulants, the great majority did not live to exceed the prime of manhood, and I have no doubt but that this will be found true generally. When an individual has no desire for food, it is always better not to eat, because an abstinence for a certain period, if not of too long duration, will cause a return of the natural appetite; yet, invalids who have no appetite frequently eat, not that they desire food but because it is the regular hour for meals, and in this manner they perpetuate the want of appetite, and increase the severity and obstinacy of their afflictions. It is much better to pass one, two, or even twelve meals, than to injure the stomach, and consequently the whole system, by forcing food into it, when it is neither craved nor relished.

Occasionally the functions of the digestive organs may become so torpid that a mere abstinence from food will not restore them to a healthful activity, and should the person wait for a return of his appetite, serious and permanent mischief might be the consequence. However, in nearly all such cases, an attention to the functions of the skin, and to exercise in the open air, with regularity in sleep, and proper medication, will arouse a sufficient degree of digestive energy for the purposes of animal existence, and which, when developed, may be still further improved by a careful observance of the quantity and quality of the food, as well as of its proper mastication. Very rarely, indeed, is it necessary to provoke an appetite by stimulating the coats of the stomach to a transitory activity, and he who is guilty of such a transgression must not expect to live half of his days.

The *quantity of food* to be taken at a meal, depends entirely upon circumstances; generally, individuals eat nearly twice as much as is necessary for the requirements of the system. Laboring persons require more food than those of sedentary professions. But this must be regulated by the age, the amount of exercise, the wear and tear of the body, and the character of the climate, as well as by the composition and digestibility of the food. On an average, a healthy adult, in a temperate climate, who takes moderate exercise daily, may use from twenty-five to thirty-five ounces of solid food per day; if the temperature of his location is considerably elevated, much less will suffice, and, if it be considerably dimin-

ished, more will be required. As a general rule, the proper quantity of food to be taken at one meal can be better determined by the feelings of the person than by any specific formula, provided it be eaten slowly and with a due attention to its thorough mastication. By this I do not mean that individuals should abuse their stomachs and eat to satiety, as this is extremely improper and unhealthy, but that when a sensation of ease, satisfaction, and mental and physical quietude is felt, enough has been received into the stomach. It were generally better for all persons to rise from the table with an appetite, having eaten just sufficient to avoid a definite feeling of satisfaction, and the necessary quantity may be ascertained in a short time, by each one observing, for several meals, what amount of food is required to produce the above-named effect in his particular case. The same rule holds good with patients laboring under chronic disease, but without loss of appetite; fever patients, and others whose appetites are diminished, should never eat largely, nor produce an artificial appetite by any means whatever. It may at first be a severe tax to rise from the table, not fully satisfied with what has been eaten, but custom will soon make it easy, and whoever pursues this course will be fully repaid for his forbearance, by a freedom from those discomforts, and unpleasant sensations so frequently following the full indulgence of the appetite.

Two meals a day with a moderate refreshment between, are sufficient for health; but they never should exceed three. Breakfast, as a general rule, should be taken soon after rising and dressing, except in those cases where an early breakfast disagrees, and where active exercise before this morning meal appears to benefit the individual. Children are frequently injured by working them or sending them to school, before they have eaten breakfast; and the danger of infection from contagious disorders, epidemic causes, &c., is greatly enhanced by an exposure to their influences before breakfast. This meal should be of vegetables entirely, using no animal diet at all, and generally speaking, it may be a full, healthy meal, more particularly among laboring people.

The dinner should be taken about six hours after breakfast, though many persons who eat only two meals per day, enjoy excellent health by having an interval of eight or ten hours between them. The stomach can easily be made to adapt its wants in this respect to any length of intervals, by attention and cultivation for a few meals. With hard-working men, the dinner may be composed of an equal amount of vegetable and animal food; while with the sedentary, animal diet should be eaten sparingly, and only once or twice a week. A moderate amount of fish, soft-boiled eggs, or oysters, may be substituted for the animal diet with benefit, in all cases where they agree with the system. This meal with a hard-working person should be a full one.

Supper is generally an unnecessary meal, and those who can dispense with it, will find it an advantage to health, and to refreshing sleep. Yet those who dine very early, or who exercise actively may find it necessary to take a light vegetable meal at the close of the day, in order to allay

hunger and dispose to sleep. Supper should be light, and ought always to be taken two or three hours before retiring for the night, otherwise it will be very apt to prevent sleep, or occasion an unrefreshing sleep accompanied with disagreeable dreams.

The habit of taking a lunch or luncheon between meals is a most pernicious one, particularly to persons not engaged in active exercise. However, the most sedentary sometimes experience a desire for food between their ordinary meals, occasioned frequently by a little more exercise than is usual with them; laboring people may also require a lunch, especially when extraordinary labor and the depressing influence of heat, produce a sense of fatigue or debility with hunger. In all these cases, the use of ripe fruits will be found more beneficial than any other article that can be used. But no person should provoke an appetite of habit for any species of food, by eating between meals, when the stomach does not call for it; because, if persevered in, it will give rise to some form of disease. The tavern lunch, assisted as it usually is, by one or more draughts of intoxicating liquors, is a most dangerous custom, being equally destructive to both the physical and moral health of those who engage in it.

Although it is utterly impossible to sustain life upon any *single* alimentary substance, no matter how nutritive it may be, it is by no means proper that a great variety of food should be taken at one meal. Such a course interferes with the functions of digestion, and will ultimately give rise to disease. The fewer the articles of diet used at any meal, the better will it be for the health of the person, and the normal condition of the stomach. An excess of food at any time causes giddiness, lassitude, uneasiness, distension of the stomach, and drowsiness, and if persisted in, will ultimately destroy health and life. And when a person experiences any of these sensations, he is thereby warned that he has eaten too much. Those who are disposed to apoplexy, should eat a nourishing, digestible diet, but always in moderation, and on no account should they permit themselves to sleep after a meal, particularly if it has been a full one, on account of the tendency at this time to an attack of the disease.

The *quality of the food* is a very important consideration. Man is undoubtedly an omnivorous animal, and requires both animal and vegetable food, the first of which yields a much larger amount of nourishment than the latter; but it must not be forgotten that a too highly nutritive diet is as detrimental to health and longevity as that which contains an insufficient quantity of nutriment. Consequently it is better to use animal diet in proportion to the quantity of vegetable which is consumed, according to the requirements of the constitution.

Vegetables require a longer period for digestion than animal diet, and are likewise more apt to produce acidity and flatulency; those, however, which are cooked, usually digest the more readily, though in this form they are not always adapted to the nutrition of the system, from the fact that the application of heat more or less completely destroys their organization. Animal food digests more readily than vegetable; and though the flesh of

young animals is more tender and soluble than that of the adult animal, yet it is frequently less digestible. For instance, it is well known that beef and mutton are more readily digested, and are more healthful than veal and lamb. Yet vegetable diet affords as much nourishment to the system as animal, and without occasioning as much stimulation, heat, or repletion of the blood-vessels; and, as a general rule, they who use animal food sparingly, have a better appearance, more strength, and more cheerful spirits than those who partake largely of it; their muscles are likewise firmer and more plump, and their skins more clear and free from disease. Animal diet increases the action of the heart and arteries during digestion, renders the blood thicker, richer, and more stimulating, and causes a greater tendency to inflammatory and other forms of disease, than one of a vegetable character.

In relation to the kind of food best adapted for use, each individual should observe what articles agree best with his stomach, for it is frequently the case that an article which would be perfectly proper and quite healthful for one class of persons, would produce much derangement in others. Again, the inhabitants of one climate will on account of the excessive heat or cold, require directly opposite kinds of food to maintain health and support life. Thus, the natives of Greenland could not exist unless they largely used oil and fat meats, which causes a large quantity of carbon to be formed in the system, and the combustion of which by the oxygen of the air, produces a great degree of heat, sufficient to enable the system to resist the intense coldness of their climate. Again, in tropical climates, and in temperate latitudes during the hot season, the system requires a smaller quantity of food, and of less carbonaceous quality; because the air being expanded, less oxygen is inhaled at each inspiration than in cold climates; and, when the inhabitants of warm countries consume large quantities of food, an excess of carbonaceous matter is produced in the system, which not being destroyed by the oxygen of the air, engenders disease of the liver, bilious fevers, &c. On the contrary, a deficiency of carbonaceous food in cold countries, or in cold seasons, when there is an excess of oxygen, diminishes the animal temperature, and gives rise to pulmonic diseases.

There is one thing however, which I may state here, and that is, that many vegetables are rich in carbon, containing it probably more largely than animal flesh; and, no doubt, a diet from such vegetables would be more beneficial to even those residing in cold countries, than the excess of animal food so commonly used. Intellectual activity is very much diminished by an excessive use of flesh, while on the contrary, those who eat sparingly of it, have a greater degree of intellectual and moral power. This fact may be readily ascertained by comparing meat-eating nations with those whose fare is principally derived from the vegetable kingdom.

Children require much less animal food than adults, and females than males, and whatever may be the custom or business of an individual, the

quantity of animal food should be greatly diminished in warm weather; indeed, for the sedentary, and those of full habit, it were better to eschew meat entirely during the hot months of the year. In cold weather, a more stimulating and persistent nourishment is needed than in summer, and a certain amount of animal food will generally be of benefit, more especially to those of active, laboring habits.

There is no doubt that an excess of animal diet vitiates the fluids of the system; and we most commonly find that those who are laboring under "humors," as scrofula, cancer, cutaneous diseases, &c., are either great flesh-eaters themselves, or their immediate predecessors were. Animals are as liable to disease as human beings, and however apparently pure their flesh may be, a tendency to disease is imparted to those who consume it. But when the animal itself is diseased, by the pernicious habit of stall-feeding, to fit it for our markets, or by a forced driving from country pastures, the deleterious consequences arising from the use of their flesh as food must be, as is evident to every discerning mind, of a serious character. Large flesh-eaters, and especially those in country places where pork in some form is eaten at every meal, are very liable to epidemic and malignant diseases; and thousands have died of typhoid, bilious, and congestive fevers, of dysenteries, of cholera, small pox, &c., who might have been saved, if their systems had not been vitiated by the gross character of their food. And among children, those who are the greatest flesh-eaters, are more subject to worms, diarrhea, &c.

Condiments should generally be avoided, because they generally over-stimulate the stomach, causing an artificial demand for more food than is necessary, and a repetition of which must ultimately weaken, if not actually disease that organ. The plainer and simpler the diet, the greater will be the mental and physical health and strength. Hence, persons who are constantly indulging in high-seasoned food, rich puddings and pastry, mince pies, plum pudding, plum cake, hot bread, &c., are as constantly suffering from some kind of affliction, for which they are obliged to be almost constantly under the physician's care. It is not necessary, however, that food should be unpalatable, because if this is the case, the stomach will refuse it; it should be plain, nutritious, and palatable, and sufficient should be eaten to prevent the system from becoming debilitated.

In speaking of the various articles of diet separately, a few pages beyond, further reference will be made to the above points.

The *manner of eating* is by no means a trifling consideration; it is as important to health and proper digestion, as an attention to the quantity and quality of the food. But to witness the major portion of American meals, and especially at public places, one would suppose that it was a matter of no interest how food was eaten, so it became safely lodged in the stomach. A stranger to the habits of this country, on witnessing a meal on a steamboat, or at a hotel, would be led to believe either that the partakers thereof were eating on a wager, and that the first one from the table would be winner, or that the meal was so obnoxious a task, that every one

endeavored to hasten through it as rapidly as possible, pouring soups, fish, meats, custards, pies, liquor, nuts, oranges, raisins, &c., into the stomach en masse, without regard to quantity, or their preparation for the digestive organs. No wonder that headaches, dyspepsia, consumption, hepatic affections, and premature old age, are so common among us; and especially, when we consider that the destructive influences of such a course are most generally aided by a want of exercise, various dissipations, &c.

For at least half an hour previous to a meal, and an hour after, more especially with the dinner or principal meal, active bodily and mental exercise should be avoided as much as possible; thus, running, long and hurried walking, protracted speaking or singing, serious or active study or thought, &c., are exceedingly improper at such times. The individual should endeavor to compose his system, and thus prepare his stomach for the meal, and maintain this state of quietude for about an hour after finishing the meal, in order not to interfere with the digestive action. Such a course will permit the stomach to properly digest the food, prevent disease, impart strength and nourishment, and entirely obviate a tendency to dyspepsia.

During a meal, little or no fluid of any kind should be drank, as it distends the stomach, dilutes the gastric juice, impairing its digestive solvency, and thereby increasing a disposition to gastric affections. Observe animals in this respect, they never eat and drink at the same time. When drink is taken during or soon after a meal, it should not be too cold nor too hot, but moderately warm; because heat being necessary to digestion, the cold beverage arrests the digestive process, causes the food to remain undigested in the stomach, often for several hours, thus producing dyspepsia, obstructions, &c.; and if the drink be too hot, the stomach is too much stimulated, from which, when reaction takes place, results debility, and loss of action of the organs concerned in the function of digestion.

Powerful mental excitement should be avoided immediately previous to, during, or for some time after a meal, especially *anger*; many a person disposed to apoplexy, epilepsy, or other form of disease, has brought on a fatal attack by eating immediately after some intense excitement of the mind, and even by becoming angry after a temperate meal. Sexual cohabitation after a meal, is frequently indulged in; this is exceedingly pernicious, and though in the young adult it may be practiced with apparent impunity, it will certainly and invariably give rise to some permanent and serious disease if persisted in.

A meal should always be made a time of mental and physical relaxation; instead of the gloomy, melancholy, and hurriedly anxious appearance of our mysteriously taciturn eaters, who, at a meal, resemble criminals, instead of honest, intelligent individuals,—cheerfulness and sociability should prevail; conversation of a light, interesting character should be indulged in, so that all, even to children at the table, may participate; the meal should be consumed leisurely, without hurry, or any unpleasant, constrained feelings, each one endeavoring to render his neighbors happy and

cheerful, and thus secure these same feelings for himself. At least, half an hour should be devoted to a meal; money-worshippers may despise this remark, but the day for regret and suffering from an inattention to these rules, is certain to come; let all who value health and happiness, be strictly observant in these matters. How many are there, who have gained riches at the expense of health, and instead of enjoying their possessions, are rapidly parting with them to the physician, &c., in the vain endeavor to regain former health and strength? To destroy the constitution in the desire to amass a fortune, and then to dispense with this fortune that the system may be restored to its former condition, seems to me folly in the extreme; a life so passed is truly a misspent one.

Food must always be well and finely masticated before it is swallowed,—the finer the better; and the act of chewing or masticating, instead of being rapid, as is too often the case, should be performed with care and moderation, taking ample time to perfect the complete mastication of the food, thereby inviting a flow of saliva to the mouth, which, by mixing with the food, assists in its thorough digestion in the stomach, and, at the same time prevents us from putting into the stomach more food than is really required for health. Fast eaters seldom masticate their food sufficiently, hence they not only throw into the stomach a quantity of solid matter not fitted and prepared for the digestive powers, but from the rapidity with which it is “bolted down,” the stomach does not begin to fully realize its presence until too much has been received into it, and dyspepsia must undoubtedly be the result.

Parents are inflicting a serious injury upon their children by urging them to eat fast; indeed, a great part of the dyspepsia of adult age may be traced to the endeavor of the child to obey that so frequently repeated command,—“make haste, eat faster,—I am in a hurry, and don’t want the table to stand here all day.”

At some of our hydropathic establishments, they constantly recommend a slow mastication of food, but take great care not to place any before their patients, that they can masticate; the food being principally rice, corn, &c., well seasoned with a large supply of water. Slops of this kind used daily, are as injurious to the stomach, as improperly masticated, solid food.

Minuteness of division of solid food is an essential and important aid to digestion; for the performance of this preparatory measure, nature has provided us with cutting and grinding teeth,—they are certainly necessary, or else they would not be present. They are placed in our mouths for use, for the preservation of our health and lives by a proper employment of them. These facts are well known; the toothless undoubtedly appreciate them, for they find artificial teeth valuable adjuvants to the gastric operations. By chewing, the saliva flows into the mouth and mixes with the food, and it must be remembered that this is an important office, because the saliva and other fluids of the mouth contain ingredients of much value in digestion. I have frequently cured the worst cases of dyspepsia by advising the patient to let all medicine alone, confine himself exclusively

to an animal diet, and use as little fluid as possible; the meats are not to be swallowed, nor must any efforts at swallowing be attempted, but he must continue chewing, chewing, and chewing slowly and carefully, each mouthful, until there is nothing left in the mouth, when another mouthful may be operated on in the same manner. I prefer animal diet, in these cases, because it is less apt to produce flatulency than vegetable, and, because an amount of nourishment may be obtained from a much smaller quantity; by the constant and incessant chewing, the food becomes finely divided and prepared for the stomach, and so intimately mixed with the fluids of the mouth as to form almost a perfect fluid, in which state it finds its way into the stomach unconsciously, and without any effort on the part of the patient. When in the stomach, it is so thoroughly fitted for the digestive action as to call forth no unnatural exertion of this organ, which has thus an opportunity of gradually recovering its healthy condition. Beside, the food being thus slowly and carefully passed into the stomach, the patient becomes satisfied with a much less quantity than if it were more rapidly swallowed, and less perfectly masticated.

Good teeth are essential to good mastication and healthy digestion, and as many persons are not aware of the value of teeth, or of the method of preserving them, a few words here, relative thereto, may not be out of place. A writer observes:—"The expression and general appearance of the face, depend much upon the condition of the teeth. If they are perfect, regular, pure, and clean, they contribute more to beauty, than any of the other features; but if neglected, diseased, or incrustated with an offensive accumulation, they excite in the beholder both pity and disgust."

The teeth are destroyed from three causes: First, An inattention to their cleanliness and a healthy condition of the gums; Second, From the use of mercurials, which invariably and permanently destroy them; and Third, From a peculiar condition of the system, as we frequently witness in persons of strumous habits, whose teeth, notwithstanding every care, rapidly decay. These last two causes can only be remedied, the one, by an avoidance of all mercurial agents, the other, by treatment to remove or change the diathesis of the person; and with both, the following additional measures should be rigidly pursued:

When food is permitted to remain between the teeth, it undergoes decomposition, giving rise to lactic and other acids that corrode the enamel, and ultimately destroy the teeth; beside which, the presence of this decomposed food, causes a very offensive breath, rendering it sickening to converse with a person, and in some cases, is almost insupportable; frequently, a whole room will be filled with the stench arising from a person's mouth who is neglectful of his teeth. Now, whatever right an individual may have, to do with his own person as may seem to him proper, he certainly has no right to offend the senses or feelings of those around him, nor force upon them the baneful effects of an inattention to cleanliness. I know of nothing more repulsive than to converse with, and inhale the breath of, a person from whose mouth emanates a most fetid odor—it is nauseating, loathsome in the extreme—

and yet strange to say, such persons are commonly the ones who cannot converse with another unless their mouths are placed almost in contact with his face. This unpleasant condition may be removed and prevented by a very simple process, namely, that of drawing a piece of floss silk, or linen thread (waxed), through the teeth, daily, and thereby dislodging the accumulations between them; a tooth-pick will partially accomplish this, but not so effectually as the waxed thread. In addition to this, the teeth should be brushed every morning, at least, with a brush and water, or some one of the mixtures named below. The greater part of the tooth brushes, as made at the present day by manufacturers, are impositions, and really good for nothing, for after having been employed a few times, the bristles will fall out, to the discomfort and annoyance of those who use them; great care should, therefore, be taken in purchasing a brush, to select a good one, the manufacture of some well-known and reputable brush-maker.

An accumulation of deposit from the fluids of the mouth, called tartar, and which consists chiefly of the phosphate of lime, is very apt to take place on the teeth, especially if they are not cleansed daily. If this deposit is allowed to remain, it causes a retraction of the gums with exposure of the neck of the tooth, spongy gums, foul breath, decay of the teeth, &c. Whenever it cannot be removed by brushing the teeth, a good dentist should be called upon to remove it. And in order to secure good teeth, prevent them from decay, or arrest this when it is present, every individual should consult a dentist every four or six months, having him to inspect the teeth. But be careful to employ a well-educated dentist, for there are hundreds of impostors in the country, who have ruined thousands of teeth, and have been the means of creating an unjust prejudice against intelligent dentists.

The following rules will tend to keep the teeth good to an advanced age:

1. Be careful not to hold any fluid or solid substance in the mouth, either too hot or too cold; and be very particular not to bite or mash any hard substances, as nuts, &c., with the teeth.

2. Have the teeth examined twice or three times a year, by a competent dentist.

3. Prevent any accumulation of tartar on the teeth.

4. After every meal, thoroughly cleanse the mouth with clear water; and once every day cleanse the spaces between the teeth, by a waxed thread, as before stated.

5. Every morning, and every night if possible, clean the teeth with a stiff brush, and one of the following preparations; and in using the brush, do not confine it to the front surface of the teeth, but pass it thoroughly over the tops of the grinding teeth, and on the backs of all.*

- a. Take of prepared Chalk, one ounce; pulverized gum Myrrh, three scruples; Camphor, five grains; water, a sufficient quantity.

*I am aware that many persons consider this course as too much trouble, they want a quicker and less laborious method of effecting this result, the consequence is that in a few years their teeth rapidly decay. In one of cleanly habits, these attentions to the person are never neglected nor hurried through with.

b. Take burnt Alum, Sal Ammoniac, and common salt, of each, in powder, equal parts; water, a sufficient quantity.

c. Take of prepared Chalk, Peruvian bark, powdered old Windsor soap, each, equal parts; combine them with a sufficient quantity of tincture of Rhatany root to form a thin paste. This will be found very beneficial in cases where the gums are soft and spongy, bleeding upon the slightest touch, and the teeth are loose.

d. Another very good application for soft, spongy gums, is equal parts of tinctures of Tannic acid and gum Myrrh.

e. My colleague, Prof. C. H. Cleaveland, recommends the following as an excellent wash for the teeth: Take of tincture of Myrrh, tincture of Peruvian bark, tincture of Gentian root, each, one fluidounce; Aqua Ammonia, one fluidrachm; pure water, half a pint. Mix together, and use with a brush, after each meal. Charcoal is frequently used as a tooth powder, but it is objectionable. Some persons state that it cuts or scratches the enamel, but whether it does or not, one thing is certain, it is very apt to insinuate itself between the gums and teeth, and acting as an irritant, injure both. Were it not for this objection it would form a very good tooth powder, being a well-known antiseptic, correcting putrefaction, and purifying tainted substances. From the fact that charcoal is used by blacksmiths in polishing steel, to take out the marks made by the file, there can be no doubt of its mischievous influence upon the enamel of the teeth when used as a dentrifice. The crust of bread, burned, forms a charcoal which is not objectionable on the above account.

6. Never take any mercurial medicines, for any purpose whatever.

7. Keep the stomach in a good state by a moderate and unstimulating diet, for the secretions of the mouth are generally in sympathy with the stomach. Whenever a bad taste in the mouth is experienced, and no active medicine is required, reduce the diet a little, and occasionally take a dose of cold water with a little lemon juice.

8. Whenever the tooth aches, for a permanent cure apply to a dentist. However, where a dentist cannot be had, or where circumstances do not permit of the immediate removal of the diseased tooth, relief may be procured by one of the following preparations:

a. Take of Alum in fine powder, two drachms; nitric Ether, seven fluidrachms. Mix together, apply to the tooth on cotton, having first cleansed out the cavity.

b. Dissolve gum Copal in Chloroform; clean out the decayed cavity, and introduce the solution on cotton.

c. Take of oil of Cloves, oil of Cajeput, oil of Amber, Camphor, each equal parts. Rub well together, and apply in the same manner as with the previous ones.

d. Take of Xanthoxylin, two drachms; powdered Opium, powdered Camphor, of each, one drachm; oil of Cloves, ten drops. Mix, and triturate in a wedgewood mortar until a paste is formed. Apply as above.

e. Take of Opium, Nitre, each, two drachms; Camphor, one drachm and a

half; powdered Nutgalls, four drachms; Alcohol, three fluidounces. Mix and digest for fourteen days. Apply as in the previous instances.

The *wisdom teeth* as they are usually termed, are of but little importance in mastication, and almost always decay at a very early period. They should always be extracted as soon as possible, whether decayed or not, as by retaining them, they are apt to hasten caries of the other teeth by pressing them more closely upon each other, thereby preventing the intervals between them from being properly cleansed. By having them extracted early, this pressure is obviated, and the remaining teeth can more readily be preserved to a good old age by an attention to the rules above given.

Those articles of food, such for instance as meats, amylaceous substances, &c., which are not eaten until cooked, are generally prepared to suit the taste of persons, either by boiling, roasting, broiling, baking, stewing, or frying; and, as there is an essential difference in the digestibility and nutritive character of the same article when differently prepared, a few remarks on the several modes of cooking will be proper.

The preparation of food demands as much attention as its selection; because, the most nutritious and appropriate articles may be rendered innutritious and indigestible by an improper method of cooking. Food should not be decomposed by cooking, but merely disintegrated, so as to facilitate its decomposition and digestion in the stomach; too much, or too long-continued heat decomposes animal substances, impairs their nutritive principles, and renders them unfit for diet. So also does the preservation of them by artificial means, as salting, smoking, and pickling; either of these means tend more or less to impair the digestibility of animal flesh, by increasing the hardness of its texture, and combining with it some foreign substance, which cannot be separated from it in cooking. Perhaps the best and least objectionable mode of preserving fish, meat, and fruit, is by sugar. It has the advantage over salt, in not rendering meat less savory nor less nutritive, and in preventing putrefaction with a much smaller quantity. Pyroligneous acid, is likewise an useful preventive; meat and fish dipped in it for a few minutes, may be preserved for months without having their virtues injured, and without being attacked by insects. When this acid is used, the substances should be confined so as to prevent evaporation, otherwise, if exposed for a length of time in the open air, the acid evaporates, and decomposition ensues from the action of the atmosphere.

Boiling is probably the most eligible mode of cooking, it softens the animal fiber, renders it more pulpy, and thus enables it to be more readily and effectually acted upon by the juices of the stomach. It undoubtedly decomposes some parts of the meat, depriving it of a portion of its nutritive properties, solidifying the albumen, and changing the gelatine into a glutinous matter, but still it does not so alter the relation of the elements in meat, as to materially diminish its nutritious qualities. Much, however, depends on the manner in which the process is conducted; if the boiling be too quick, the albuminous matter of the meat is coagulated, the outside of the flesh is rendered hard while the interior is not sufficiently done, and the

digestibility of the meat is much diminished; if the boiling be too slow, or too long-continued, a hard and indigestible substance may be obtained, or, if this be not the case, the nutritive quality of the meat will be considerably lessened. The best method of boiling meat, so as to preserve its juices, secure its tenderness, and not materially diminish its nutrient qualities, is, to first boil the water briskly, then introduce the meat, continue the boiling for a few minutes, and then diminish the temperature of the water to 165° or 170° , by adding sufficient cold water—so as to keep the fluid in that state which approaches more to simmering than boiling—at which temperature it may be kept for two or three hours. In this way all meat, except poultry, should be prepared for invalids and the dyspeptic.

Beef, mutton, and other matured animal meats are always more tender and juicy when boiled in hard water, because a layer of coagulated albumen is more readily produced on their surfaces, preventing the escape of their juices. On the contrary, fish should always be boiled in soft water, as their firmness and consequent indigestibility is proportioned to the hardness of the water. Soups, broths, and jellies, require soft water.

Boiling dissolves the cell-walls of vegetable substances, deprives them of a quantity of air, and renders them more soluble in the stomach. Long simmering is preferable to boiling, so that they may be perfectly softened throughout, but in no part quite dissolved. Rain, or soft water with a little salt is better adapted to vegetables, such as potatoes, cabbage, greens, corn, turnips, cauliflower, peas, &c., and these always require a long boiling, because they are rendered indigestible and highly injurious, when boiled too little. Potatoes are most nutritious and digestible when boiled so as to be neither waxy nor mealy, but so softened as to be readily mashed. Over-boiling lessens their nutritive quality.

Roasting is the next best method of cooking; by this process, flesh is deprived of part of its water, its fat is liquefied, partially escaping, its albumen is coagulated, and its fibrine corrugated. As the roasting proceeds, the surface of the substance acted upon becomes gradually darker colored, and finally scorched; and its tendinous portions are rendered viscid and tender. Meats when roasted should not be *underdone*, nor *overdone*—the popular idea is that when underdone they are more nourishing, but this is an error; beside, underdone roasted meats are less digestible and consequently less nutritious, than when well done. Boiling extracts the gelatine of flesh, while roasting does not. By boiling, beef loses one-fourth of its weight, and mutton one-fifth, but, by roasting they lose one-third. The starch grains of vegetables are rendered more or less soluble by roasting, and thus many of them are rendered more digestible and nutritive than they would be in the raw state. Vegetable albumen is coagulated by roasting.

Broiling produces changes in meat similar to those caused by roasting, but the process is more rapid. The outside surface becomes suddenly browned or hardened, preventing the internal juices from evaporating, so that the meat is rendered peculiarly tender, and more savory than when roasted. For dyspeptics and those of delicate stomachs, broiled meats are not as well fitted as when boiled.

Baking, when mismanaged and not attended to, is a very objectionable mode of cooking meats, and has probably, from this cause, created some prejudices against it; but when properly managed, it is the most economical, the least troublesome, and the most useful method of preparing nearly every kind of food. Most usually, too much heat is employed, which decomposes the fat, and produces a disagreeable and injurious empyreuma, which renders the meat unpalatable and indigestible. But if the heat be properly regulated, and especially if the substance baking be slightly covered so as to prevent scorching and drying, the meat will be rendered tender and juicy, of the flavor of a roast, having its nutritious particles preserved, and without any decomposition or waste. Baked meat pies, and particularly when the pastry is rich with butter, are more difficult of digestion, than meat baked without any pastry. Dyspeptics, and those whose stomachs are weak, should avoid all baked food, except it be light amylaceous puddings made of arrow-root, sago, tapioca, rice, &c.

Stewing is objectionable; it deprives the meat of much of its juices, and decomposes, in a greater or less degree, the fatty and gelatinous portions. The fluid in which meat is stewed contains a great part of its nutritious elements, but, being too fluid, they cannot be digested, until their watery parts have been absorbed by the stomach. Stews are not adapted as food for the sedentary and dyspeptic, and if they are habitually partaken of, they will eventually produce painful and dangerous symptoms of disease. They are rendered still more indigestible and unfit for the stomach, when various spices, butter, wine, or other stimulating ingredients are added to improve their flavor.

Frying is the most objectionable of all the modes of cooking. The heat is applied to the meat through the medium of boiling fat, or oil, which is rendered extremely indigestible and obnoxious to the stomach, on account of the chemical changes which are thereby effected. Invalids, convalescents, and dyspeptics, should never eat fries, as eggs, oysters, pancakes, omelettes, fritters, fried fish, liver, pork, beef, mutton, &c.

CHAPTER III.

Articles of Animal Diet.—Meats.—Poultry.—Fish.—Eggs.—Milk.—Butter.

THE articles from which food is prepared are very various, whether derived from the animal or vegetable kingdom; and as some of them are preferable to others on account of their being more readily digested, and their different nutritive powers, a brief reference to them will be necessary. I will com-

mence with those from the animal kingdom, first observing that dark colored meat is usually more digestible and nourishing than the white meat of animals, on account of its containing a greater amount of fibrin; and the same may be said of the flesh of animals which are permitted to roam unrestrainedly in the open air, when compared with that of confined and stall-fed beasts. Again, the meat of hunted animals is tenderer and more digestible than those which are killed without any previous exercise. The flesh of the female animal is almost always more savory than that of the male, while that of a castrated or spayed animal is still more so. All meats have their digestibility as well as nutrient qualities impaired by salting and smoking. Hence, although salted meats may be eaten by healthy persons of active habits, yet as a general rule, they are unfit for convalescents, dyspeptics, and those of sedentary occupations.

Beef is a very healthy, nutritious, and easily digested meat; it should be soft, pliable, fat, and taken from an animal neither too young nor too old, and perfectly free from disease. Its fat part is not so easily digested as its lean, hence, the great accumulation of fat upon *prize beef* does not contribute any to its value; though, unless some fat be present, the lean part is not so apt to be juicy and tender. The tongue as well as the tripe, are not so easily digestible as other parts, and are, therefore, not proper food for dyspeptics and those having weak stomachs. Properly cornfed animals, that have had plenty of exercise in the open air, furnish the most healthy and delicious meat.

The best mode of cooking beef is by boiling or roasting; though beefsteaks are by no means indigestible, when properly managed. To be wholesome, beef must not be too much done, nor underdone. As an article of diet for convalescent persons, it is best prepared in the form of *beef tea*, which should be made as follows:—Cut half a pound of the lean part of a good rump-steak into thin slices, put these in a dish, sprinkle a little salt over them, and pour on them a pint of boiling water. Cover the dish with a plate, and set it over a very gentle fire, that it may steep, not boil, for an hour. Then put the whole into a pan, cover it, and allow it to boil for fifteen minutes; after which strain off the fluid from the meat through a fine sieve or napkin. If this tea be too strong, it can be reduced by the addition of boiling water.

Generally, the firmer texture of beef renders it less readily digestible than mutton, on which account this latter is the preferable meat for convalescents. *Dried or smoked beef* forms a palatable and wholesome relish for healthy stomachs, but the meat having been impaired in its digestibility by drying, salting, and smoking, it is not adapted to the weakly and dyspeptic. The density of fiber of every kind of animal food is very much lessened by keeping it for a certain length of time before cooking, and which is owing to an incipient decomposition having ensued; but great care should be taken not to allow this process to advance so far as to taint the meat in the slightest degree, for it would be very apt to give rise to disease, or, in convalescents, cause a relapse.

Mutton is probably more easily digested than any other animal food, being at the same time highly nourishing and healthful. The flesh of the castrated animal, or wether-mutton, is by far more palatable and more digestible than that of the male animal; this last is coarse, and so strong and unsavory that many persons cannot eat it at all. Ewe-mutton is also preferable to the male, if the animal is not above three years old. For convalescents, dyspeptics, and persons of weak stomachs, there is no meat so wholesome and digestible as wether-mutton: it is best cooked by boiling. A mutton-tea may be prepared for invalids as follows:—Cut half a pound of the lean part of good mutton, into thin slices, put these in a dish, with a pint of boiling, soft water. Cover the dish with a plate, and set it over a very gentle fire, that it may steep for an hour. Then put the whole into a pan, cover it, and allow it to boil for half an hour, after which strain off the fluid through a fine sieve or napkin. If it is desired to add barley to this, an ounce of pearl barley, previously washed and macerated in boiling water for an hour, may be boiled with the mutton-tea—separating the barley on straining.

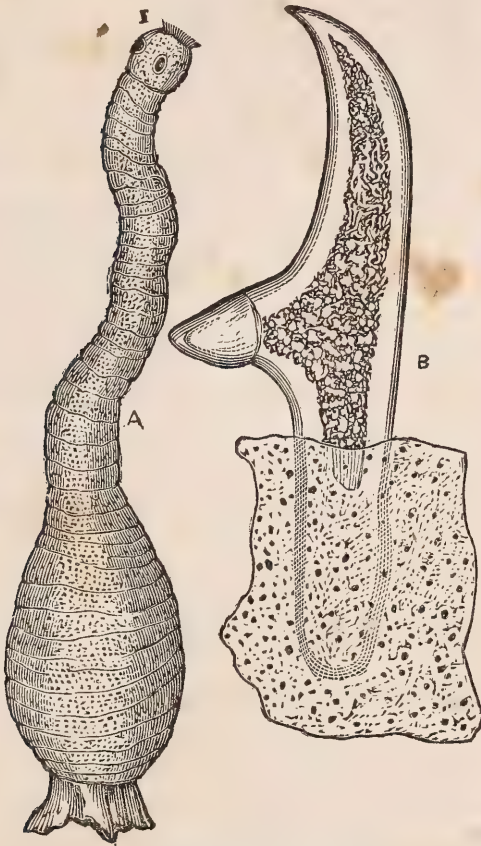
From the tendency of sheep to disease, care must be taken never to eat the meat of a diseased animal.

Venison is a nourishing, palatable, healthful, and easily digested meat, and from the fact that the deer is usually killed in the chase, its flesh, like most varieties of game, is more tender than that of domestic animals killed in the ordinary way, and by some is considered a greater delicacy.

Pork is usually considered a savory, nutritious meat, not so digestible, however, nor even so healthful, as beef or mutton. I consider it a very unwholesome meat, notwithstanding its extensive preparation and use in this country; because, in addition to its greater indigestibility, it is almost always diseased. There is hardly a hog fattened for the market but what labors under a measly condition, or a tuberculous affection of the liver, or kidneys, or perhaps both, as well as of other organs, and it is no uncommon thing for people eating pork to cut or bite into hardened tubercles in various parts of the lean, and especially of the fat of the meat. Surely, the meat of a diseased animal cannot be healthy, and yet this diseased meat forms the principal part of the diet of an immense portion of our population. No wonder that diseases of the skin, scrofula, cancer, disordered digestive organs, &c., are so common in those sections of the country where it is so constantly eaten; or, that epidemics, as dysenteries, typhoid fevers, &c., prove so fatal, when they occur among a class of people whose principal diet is pork in some form, but more generally that known as bacon. I have seen persons cut into a piece of pork containing tubercles, and actually eat it, even after having been told it was diseased—so great was their reverence for pork. I have no doubt but that, with many persons, the use of whiskey, peach-brandy, apple-brandy, or other alcoholic drinks, lessens the immediate effects of the influence of pork upon their systems, for it is a well-ascertained fact, that these liquors will prevent or suspend the activity of tuberculous affections for a long time, frequently effecting apparent cures. But then, the remedy is by far a greater evil, than the pork-eating; it were much better to use

neither. Bestow the same attention upon raising beef and mutton, and it will give better results, both as regards health and pecuniary profit.

Fig. 1.



A. The animal in Measly Pork magnified. 1. The Teeth or Hooklets. B. One of the Teeth greatly magnified.

Even when the flesh of pork is healthy, it is not so wholesome and digestible as other meats, being better adapted to those whose stomachs are healthy and strong, and whose occupations are active and laborious; and in all cases, its long-continued use will invariably give rise to disease, sooner or later in life. And as many will continue to use it, notwithstanding its unwholesomeness, a few remarks may be made in reference to its several modes of preparation.

Pork should never be eaten by dyspeptics, by those of sedentary habits, nor by those who are inclined to corpulency, or are liable to affections of the skin, scrofula, or other tuberculous forms of disease. The flesh of the sucking pig or shoat, is considered a dainty relish, but it is much less digestible than the matured meat, and frequently affects the bowels in a violent manner.

When the sides and flanks of a full-grown hog are salted and dried, (and frequently smoked,) it is called *bacon*. It is a strong, exciting article of food, hard to digest, and fit only for robust persons who work hard. The best method of cooking it, is to boil it with vegetables; when fried, with or without eggs, it is unhealthy and is not fit to eat.

When the thigh, or ham of the hog, is salted and smoked, it forms *ham*, a stimulating food, fit only for laborious persons, and which on account of its difficult digestibility frequently disagrees with many. It proves wholesome only to those with whom it agrees. It is best cooked by boiling; when fried, it is rendered very indigestible, and should not be eaten by dyspeptics and persons of sedentary occupations.

Sausages may be prepared from the boiled flesh of several animals; in this country they are principally made from pork. The meat is made fine, seasoned with salt, pepper, and spices, and is eaten in this state, or more commonly dried and smoked. They are a very indigestible article of diet, being scarcely fit for the stomach of the robust and hardy; and they should be especially rejected by the sedentary and dyspeptic. When exposed for any length of time to dampness, they are liable to experience certain chemical changes which render them poisonous.

In the Journal of Organic and Medical Chemistry, is the following ;—
 “Hog’s lard, when fresh, is composed of stearine, margarine, and oleine; but, when rancid, it contains several poisonous acids, and a yellow coloring matter. Pork contains more oleine, (a fusible, oily matter, incapable of assimilation,) than other varieties of this class of meats. According to Brande, pork contains 76 per cent. of water, 19 of albumen and fibrine, and 5 of gelatine. Total of nutritious matter, twenty-four parts in a hundred. We see, then, that the pork-eater not only takes a greater amount of this indigestible matter into his stomach, than those who do not feast on swine dainties, but he is much more liable to disease. * * * * We defy all hog-eaters, chemists, or physiologists, to prove that swine’s flesh is a healthy article of diet. * * * * Since the days of Moses, no small portion of the human family have looked upon the swine as an impure animal, and entirely unfit for food. Its impurity consists, not merely in the common mode of rearing the domestic swine with the most filthy offscouring from every thing foul and corrupt, which constantly distends his diseased carcass; but it consists in a disease purely scrofulous in its character, which is inherent and peculiar to the hog, and is constantly being developed, especially in the pig-stye. How often does the farmer, or those engaged in the fattening of swine, on beholding their swelled appearance, imagine them quite ready for slaughter, when at their subsequent visit to the pen they find them dead! Now all will agree that this pork is not fit for food. Why? not because it is a dead mass, but because it died of disease. Now, suppose this swine had been butchered the day previous to its death by disease, would not the pork have been called good? Could the eater of that meat have detected the disease by the taste? We think not. It is evident, therefore, that not only would the pork have been considered good, but in its assimilation to the system, the consumer would have partaken of the disease. (Kidney-worm so common to swine, is but a form of tuberculous disease—a kind of hydatid.)

“The name *scrofula* had its origin in the well-known fact that it was a disease peculiar to swine. The analysis of the blood of scrofulous subjects shows that it differs materially from that of healthy individuals. In the former there is an excess of serum, and a deficiency of albumen and fibrin. Hence, the solids formed from this blood are feeble, lax, and incapable of resisting exposure, fatigue, and disease. It is true, that for the most part, scrofula is hereditary, still there are many well-marked cases of the acquired disease, from the use of pork.

“Dr. Marcey, speaking of the origin of scrofula, remarks. ‘Let him (the pork-eater) see in the slaughter-house how often the internal organs and surfaces of the vile carcasses will be studded with tuberculous formations or scrofula, and then let him return to pork, like a dog to his vomit, if he chooses.’”

“A strong corroboration of our views is found in the fact, that in all those countries where the swine is forbidden to be used as food, scrofula is almost unknown. The same law obtains with the Jews, who, abiding by the precepts of their religion, inhabit almost every climate and country, and are scarcely ever afflicted with scrofula.

“It is absurd to argue that flesh contaminated with scrofulous miasm cannot communicate to the healthy body, after digestion, its morbid particles. The poison pervades every atom of the affected flesh, and no washing or digesting can destroy or banish the noxious qualities.”

Veal, or the flesh of the calf, is not so digestible as beef; it contains a large amount of gelatinous substance, as is the case with the meat of all young animals. The best mode of cooking is by roasting or baking. Broth made from veal generally produces a laxative influence on the bowels, and may be used with advantage by persons subject to constipation. A tea of veal made in the same manner as beef-tea, from a fillet or knuckle of veal, is sometimes of advantage to the invalid.

Calves' feet Jelly is a very useful article for convalescents, being nutritious, grateful to the palate, and easy of digestion when used in small quantities. Like all other concentrated aliment it is not so readily changed into chyle, as many other articles holding a less amount of nutriment. It is an improper diet for dyspeptics. It is usually obtained by boiling calves' feet in water, for a long time, straining and clarifying the decoction, and allowing it to cool; sometimes it is previously sweetened with sugar; the addition of spices, wine, &c., renders it an improper diet for weak stomachs, convalescents, &c.

Lamb, is a wholesome diet for persons in health, it is less stimulating and less solid than mutton, but is not so digestible. It may be used by convalescents, but not by dyspeptics and persons laboring under affections of the stomach, with whom it will generally be found to disagree. A lamb should not be killed too young for diet; at the age of from five to seven months is preferable to an earlier period.

Salted Meats, as before observed, are less nutritious, and harder to digest than fresh meats. They should always be thoroughly boiled, and eaten with a good proportion of vegetable food. The *fat* of meats is very nutritious, and requires strong digestive powers, hence it is not so suitable for the sedentary, dyspeptics, and persons of weak stomachs. When eaten it should always be with at least an equal amount of lean meat, and some bread, rice, potato, or other farinaceous article of diet. Too much fat causes uneasiness, weight, oppression, eructations, and affections of the digestive apparatus. It is positively unhealthy when fried, or roasted; and should never be allowed to children and invalids in any form.

Game, or birds and beasts, living in a natural state, and which are killed in this condition, are in general more healthful, when cooked in a plain manner than the same animals, when tamed, and killed in the usual mode.

Poultry, by which is generally meant all farm-yard birds, as chickens, hens, ducks, turkies, &c., are generally very digestible and healthy food for persons having stomachs free from disease. Chickens and turkies are considered the most easy of digestion, if not too richly seasoned; and geese and ducks are less digestible and more stimulating, usually being obnoxious to dyspeptics, and persons whose digestive powers are not very strong. The dressing usually employed when baking or roasting these birds, is extremely stimulating and indigestible, on account of the fat and spices mixed therewith.

Chicken Soup, is a light, nourishing diet, and may be used by many sick persons and convalescents. It is best when made from the lean portions of the chicken, which should be boiled in water to which a little salt has been added, and as the fat and scum arises, it should be removed. Cracker, rice, barley, or toast-bread, may be added to it, to increase its nutritiveness, if desired, and not contra-indicated. When highly seasoned with spices, it becomes an improper diet, especially for dyspeptics and convalescents.

Fish furnish an almost endless variety of food for man; and in some countries, especially in the northern parts of the two continents, where vegetation is scarce, they form the principal diet of the inhabitants. However, they are not so nourishing as the meat of warm-blooded animals, but are sufficiently so to support health and strength. With many stomachs fish-meat is difficult to digest, and when it is eaten habitually, it frequently induces disease of the bowels, and of the skin. Some individuals are very apt to be affected by eating certain kinds of fish, experiencing a disagreeable, uneasy sensation at the stomach, a small amount of fever, and an eruption on the surface of the body; these symptoms are also produced occasionally in deranged conditions of the digestive apparatus. All kinds of fish when out of season, are of difficult digestion and very unhealthy, and in some situations they become poisonous. Salt water fish are always better than those living in fresh water, as they possess a firmer and more palpable flesh, which is less liable to putridity, and is less clammy or slimy. Many persons cannot eat fresh water fish at all, without inducing an attack of cholera-morbus or other difficulty. Fishes having scales are usually more digestible than others; thus the cod, shad, trout, perch, fresh herring, plaice, flounder, turbot, whiting, sole, &c., are the most healthy and nutritious, while eels, skate, sturgeon, mackerel, salmon, &c., are much less digestible and wholesome. Indeed, all fish which abound in oil, are stimulating, and difficult of digestion.

Fish are best cooked by boiling; when fried or stewed they are rendered quite indigestible. Butter should not be used as a sauce for fish, nor the acid fruits or jellies, as they almost always produce heaviness or uneasiness of the stomach; milk is a very improper article to be used at the same time with fish, frequently inducing severe diarrhea, cholera-morbus, &c. When fish are dried and salted, they become less nutritious and digestible, and should never be eaten, except by the healthy and hard-working, and even by them should be used very sparingly.

Crabs and Lobsters, are by no means wholesome or digestible, though frequently eaten with impunity. Perhaps the meat of the claws is the most easily digestible. They are very apt to disagree with some persons, giving rise to an acrid sensation in the throat, pain and heaviness at the stomach, nausea, depression, giddiness, and frequently a serious colic. Many persons are attacked with a nettle-rash, whenever they eat the meat of either of these crustacean animals. Severe vomiting and purging frequently follow their use: and when eaten in excess, they have occasioned stupefaction, unconsciousness, and other symptoms of apoplexy. It is said that old English cheese, grated, and freely partaken of, will act as an antidote to the poisonous effects of these crustaceans.

Turtle affords a healthy, nutritious flesh, when cooked in a plain manner; but when made into a rich soup with a large amount of spices, force-meat balls, &c., it is destructive to both the stomach and general health.

Mussels are often used as an article of diet, yet they are extremely unhealthy and indigestible, frequently occasioning symptoms in some respects similar to those produced by lobsters and crabs.

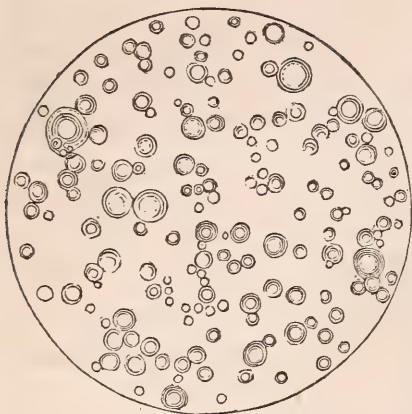
Oysters furnish a delicious and favorite article of food: when raw, or but slightly cooked, they are light, nourishing, and of easy digestion, with the exception of the eye or tough white part, which should not be eaten. When well cooked, as by stewing, or frying, the albumen is coagulated and hardened, and the fibrin is corrugated, when they become quite indigestible, and should not be eaten. Salt water oysters are always better than those found, or propagated, in rivers. Oyster juice thickened with cracker in powder, and warmed, is frequently a wholesome and nutritious diet for persons having weak stomachs, and convalescents. With some constitutions oysters disagree, producing similar symptoms to those caused by lobsters; and they frequently prove injurious when eaten out of season.

Clams somewhat resemble oysters in their effects upon the stomach and system, yet are not so easily digestible.

Soups, as ordinarily prepared, from beef, mutton, or veal, with the addition of various vegetables, are a very healthy, nutritious, and inexpensive diet. The meat as well as the vegetables should be thoroughly boiled, and too much seasoning should be avoided. They may be improved by the addition of rice or barley, stale bread, toast-bread, &c., and will digest more readily when eaten with bread, because liquid food is apt to swell out the stomach, and render a greater action of the organ necessary for its perfect digestion. Solid aliments are, however, the best suited for weak stomachs, and dyspeptics. The addition of dumplings to soups, or an excess of spices, wine, &c., are very improper, as they tend to provoke the appetite, by which a greater quantity of food is eaten than is required, beside which, they are rendered highly indigestible; and if a course of this kind is persisted in, the stomach will certainly become diseased. When meat has been boiled for a long time in water, to which a small quantity of salt has been added, it is termed *broth*. This, eaten with bread, affords considerable nourishment, without unduly stimulating the digestive apparatus, or augmenting the heat of the body.

Eggs, when fresh, and lightly cooked, are nutritive, and moderately easy of digestion. The white of the egg is principally composed of albumen, while the yelk contains in addition a yellow oil. When the albumen is coagulated or hardened by heat, it is not thereby rendered indigestible; but the yelk is. Although hard-boiled eggs are, as a general rule, difficult of digestion, yet they are sometimes found to agree with certain persons better than when in the soft state. Vinegar is said to facilitate the digestibility of a hard-cooked egg. All articles in which eggs are cooked by frying, as omelettes, pancakes, fritters, &c., are hurtful to delicate stomachs. When an egg is whipped up with wine and sugar, it forms a valuable restorative and stimulant.

Fig. 2.



Microscopic view of good Milk.

Milk, when obtained from a healthy, well-fed animal, is very nutritious and wholesome, and it is more advantageous in its raw state than when boiled. In combination with bread, rice, eggs, sugar, &c., it ought to form the chief portion of the diet of children, until they are ten or twelve years of age; and those who are thus fed, will be found stronger, and more healthy and vigorous than those who are allowed to live upon meat, pies, cakes, and other delicacies of the culinary art. It is a preferable drink to tea, coffee, liquors, &c., and may be used pure or considerably diluted with water. A glass of milk and water, with a

small teaspoonful of salt added, is said to be the best refreshment that a fatigued or famished person can take. One part of lime-water added to two or three parts of milk, is useful to check obstinate vomiting, and to allay irritability of the stomach especially when connected with acidity, as in phthisis, and other debilitating diseases. Milk sometimes disagrees with adults, probably owing to its oily constituent, butter. It is very unfortunate for the inhabitants of large cities that no regulations can be adopted by which they may be certain of obtaining good, pure milk. The slop-milk from diseased cows, together with the impurities added to increase the quantity of artificial milk, and thereby increase the profits pecuniarily of the vender, have undoubtedly caused a great amount of the sickness in cities, especially among children. It were much better to do entirely without milk, than make use of the trash commonly sold for it in most of our cities.

A solidified milk has recently been prepared, which possesses all the properties of good milk; the following in relation to it is copied from the *American Medical Monthly*:

"To 112 pounds of milk, 28 pounds of Stuart's white sugar were added, and a trivial proportion of bicarbonate of soda, a teaspoonful, merely enough to insure the neutralizing of any acid which in the summer season is exhibited even in a few minutes after milking, although inappreciable to the organs of taste. The sweet milk was poured into evaporating pans of enamelled iron, embedded in warm water heated by steam. A thermometer was immersed in each of these water-baths, that, by frequent inspection, the temperature may not rise above the point which years of experience have shown advisable.

"To facilitate the evaporation—by means of blowers and other ingenious apparatus—a current of air is established between the cover of the pans and the solidified milk. Connected with the steam engine is an arrangement of stirrers, for agitating the milk slightly whilst evaporating, and so gently as not to *churn* it. In about three hours the milk and sugar assumed a paste consistency, and delighted the palate of all present; by constant manipulation and warming it was reduced to a rich, creamy looking pow-

der, then exposed to the air to cool, weighed into parcels of a pound each, and by a press, with the force of a ton or two, made to assume the compact form of a tablet, (the size of a small brick,) in which shape, covered with tin foil, it is presented to the public.

"Some of the solidified milk which had been grated and dissolved in water the evening previous, was found covered with a rich cream; this, skimmed off, was soon converted into excellent butter. Another solution was speedily converted into wine-whey, by a treatment precisely similar to that employed in using ordinary milk. It fully equalled the expectations of all; so that solidified milk will hereafter rank among the necessary appendages of the sick room. In fine, this article makes paps, custards, puddings, and cakes, equal to the best milk; and one may be sure it is an unadulterated article, obtained from well-pastured cattle, and not the produce of distillery slops—neither can it be *watered*. For our steamships, our packets, for those traveling by land or by sea, for hotel purposes, or use in private families, for young or old, we recommend it cordially as a substitute for fresh milk." (*See Butter.*)

The milk of confined and slop-fed cows, contains the seeds of tuberculous diseases, as scrofula, consumption, &c., and traces of tuberculous deposits mixed with an impure bloody-like matter, may be detected in such milk by means of a microscope of three hundred diameters. Sometimes, in our large cities, the milk dealers, in order to disguise the smell and taste of diseased milk, add to it a portion of good milk, and also of sugar of lead, which last is a slow but sure poison, and which may be detected by adding sulphureted hydrogen to the suspected milk, which occasions a black, or dark brown color when lead is present. Every family, and especially those living in cities, where these diabolical impositions are more apt to be pursued, should be provided with a good achromatic microscope, sulphureted hydrogen, and a few other tests which will be named in the work at their appropriate places, for the purpose of detecting and thus preserving their health and lives from these and many other base frauds which will be referred to hereafter. The benefit to be derived from the possession of these *detective agents*, will repay their expense more than an hundred-fold, physically, morally, and pecuniarily. Milk, especially the milk from slop-fed cows, is often adulterated with animal substances, as the brains of dogs, horses, calves, sheep, hogs, &c., also with water, flour, starch, chalk, &c., for the purpose of improving its color, smell, taste, and consistency. Animal matter may always be detected by the microscope; or, the suspected milk may be allowed to stand in an open vessel, in a warm place, for a day or two, when it will be found to evolve the odor peculiar to animal matter in a state of decomposition; while the odor of good milk thus exposed will be merely sour, without any putridity.

Fig. 3.



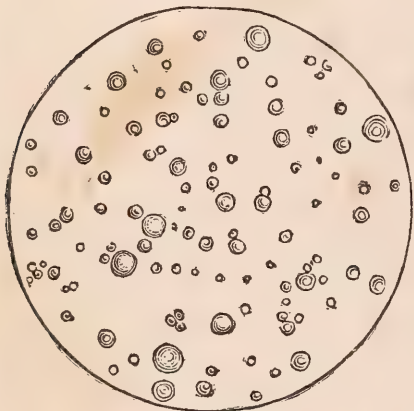
Microscopic view of Milk adulterated with Calves' Brains.

Flour or starch may be detected by adding ten or twenty drops of the tincture of iodine to a wine-glass half-filled with the suspected milk, which will be rendered of a blue color when either of these articles are present.

Where chalk is present, it will form a deposit when the adulterated milk is permitted to stand for a few hours, and to determine that the sediment is chalk, or plaster of Paris, add some water to it, and then carefully pour, drop by drop, a small quantity of sulphuric acid on it, which will occasion a precipitate of sulphate of lime.

Good milk should be of a pure, white color, and not of too thin consistence; when very thin or fluid, and having a bluish tint, it is owing to the addition of water. The man who is detected in manufacturing or selling diseased, adulterated, or otherwise impure milk, is as guilty of crime as he who commits theft, arson, or murder, and should, therefore, be subjected to similar penalties. For where is the difference between the man who takes your money stealthily and without any equivalent, or he who takes it openly, pretending to give an equivalent, but really giving an article

Fig. 4.



Poor Milk.

most certainly deleterious to health and life? Or, where is the difference between the man who fires your dwellings, regardless and ignorant of the lives he may thereby destroy, or he who knowingly sells you, as a substitute for a pure and healthy article of diet, a vile compound most certainly destructive to health and life? Again, the murderer generally finishes his deed by an immediate act, but is it any the less murder, when life is slowly but certainly destroyed by the substitution of poisonous and diseased manufactures for innocent and nutritious substances?

Cream is that element of milk which floats upon its surface when it has been standing for several hours; its upper portion is richest in butter, its lowest in caseine; churning unites the fatty globules to form butter, while the residue is buttermilk. Cream agrees with many persons when used in small quantities; but with some stomachs it disagrees in the same manner as would a similar quantity of oil, butter, or other fats. The milk most commonly sold in cities, and used in cakes, &c., is known as *skim-milk*, having been deprived of the greater portion of its cream. *Ice-cream* is more frequently made from skimmed milk, than from that containing the cream, and when thus made it forms an excellent, refreshing diet for patients laboring under fevers and various other forms of disease. A good ice-cream for this purpose may be made as follows:—Take of good sweet milk, five quarts, ten eggs, two pounds of white sugar, and sufficient essence of lemon to give the desired flavor. Add all together, having first thoroughly beaten the eggs. Surround the tin vessel in which these are contained, alternately with a layer of ice and a layer of coarse salt, and freeze in the ordinary way. If desired, tincture of vanilla may be substituted for the essence of lemon, or,

the sugar may be made into a syrup by rubbing it with a sufficient quantity of strawberries, raspberries, &c., according to the flavor desired. Some manufacturers of ice-cream omit the eggs, and substitute arrow-root, tapioca, or starch.

Be careful, when purchasing ice-cream, that it is made of good milk, or cream, and not of the poisonous articles above referred to. The impurities in cream, as lead, chalk, brains, etc., may be detected in the same manner as named for milk. Arrow-root, when added to milk to make it look like cream, may be known by the dark blue or purple color produced by adding a few drops of the tincture of iodine to a small quantity of the fluid. Pure cream becomes faintly yellowish when iodine is thus added to it.

Cheese, when recent or new, is not very easily digested, and should be eaten only by those who exercise much, and have good digestive powers; it is a very unwholesome diet for children. Old cheese is less digestible than new, and becomes more exciting and less nourishing. When roasted, or cooked, cheese becomes extremely indigestible, and is then decidedly objectionable as an article of diet; yet many persons, having powerful digestive functions, partake of cheese without any unpleasant results, while others suffer from various disagreeable symptoms. Cheese should never be eaten with dessert as an aid to digestion, for this is a mistaken and very absurd idea.

Cheese is frequently contaminated with red lead, which may be detected by allowing a piece of the cheese to remain in a small quantity of water for five or six hours; then filter, add a few drops of muriatic acid, and also a small portion of sulphureted hydrogen, when, if the smallest quantity of lead be present, the water will become changed to a brown or black color.

Sulphureted hydrogen may be made by placing, in a large mouthed vial capable of holding four fluidounces, about twenty grains of sulphuret of iron, or sulphuret of antimony, in powder, and half a fluidounce of diluted muriatic acid. Close the mouth of the vial with a well-fitted cork, which has a bent glass tube in it, so arranged that one end may remain in the cork and the other be passed down into the liquid to be examined. Such bottles and prepared corks can be obtained of any good druggist. As soon as the acid acts upon the sulphuret, it liberates the sulphureted hydrogen gas, which passes through the glass tube into the liquid under examination and produces its effects as it becomes diffused through the fluid. This gas is colorless, of a very offensive odor, resembling putrid eggs, and is highly deleterious when inhaled; consequently, care should be taken not to inhale it during the experiment.

Buttermilk is the residue of milk after its butter has been removed by churning; it consists of caseine, sugar, serum, and a little butter. It forms a very agreeable cooling beverage in warm weather, and is especially beneficial in fevers and inflammations. It is very slightly nutritive and of easy digestion, but should not be allowed to become too acid before using it. Some persons are very fond of boiled rice and buttermilk, while to others it is extremely disagreeable; it is a nutritious, healthy diet, however, when it agrees with the stomach.

Butter is an oily substance, of soft consistence, procured from the milk of animals, by agitating it constantly for a length of time, which process is termed "churning." Ewe's milk contains the largest amount of caseine and butter, is consequently less digestible, and unfit for dyspeptics. Goat's milk ranks next, relative to its nutritive principles, and of which the same remarks may be made as of ewe's milk. Ass's milk is the least nutritive, but the most easy of digestion, and on account of the small quantity of butter and large quantity of sugar of milk which it contains, it is very useful in convalescence from acute maladies, consumption, dyspepsia, &c. It is sometimes prepared artificially by dissolving a couple of ounces of sugar of milk in a pint of skimmed cow's milk. The butter used at meals is obtained from the cow's milk, which is intermediate, in nutritive and digestible properties, between goat's milk and ass's milk.

Butter is used rather as a condiment than as a direct alimentary matter. It is very difficult of digestion, on account of the readiness with which its volatile fatty acids are set free. Yet when it is fresh and sweet, and spread not too thick upon bread, there are very few stomachs which it offends. When it becomes rancid it is peculiarly unpleasant and unhealthy, and should never be used for any purpose, as diet. It is often added in large quantities to cakes and pies, and enters largely into many sauces for puddings, &c., in either of which forms it is very injurious, and will ultimately cause severe and obstinate affections of the stomach, as well as of the skin, if its use be thus persisted in. When heated, butter becomes empyreumatic, and is very unhealthy. Dyspeptics and persons having weak stomachs, should use but little butter in any form. Children who are allowed much butter, or cakes, pastry, &c., containing it, have generally a coarse and diseased condition of body, and are subject to eruptions on the scalp and other parts of the skin, boils, sores, discharges from behind the ears, &c.

In our large cities it is frequently a very difficult matter to obtain good sweet butter, from the fact that various frauds are practiced upon their communities. Thus, good butter is often mixed with a certain proportion of lard, and which mixture speedily becomes rancid; or, rancid butter is mixed with the fresh article; and, there are several individuals who make immense profits by purchasing old, rancid butter, then removing its stale and rancid character by a certain process, and disposing of it thus changed, with salt added, as new butter. When butter has once become changed from rancidity or decomposition, there is no known process which can restore it to its original purity and character. Many, very many of the diseases among inhabitants of cities, and more especially among children, are due to the constant and excessive use of butter which has become rancid. The community in every city and town, in justice to themselves, should appoint a sufficient number of honest and capable men as inspectors of the purity of all those articles termed the "necessaries of life;" they should, at least, use as rigid measures for the protection of life and health, as they do for that of property, and the "luxuries of life."

All fixed *fats* and *oils* of animals are of more difficult and slow digestion than any other alimentary principles; and with dyspeptics they are very imperfectly digested. Still, in small quantities, they are frequently beneficial among the robust and those of healthy stomachs; and in many diseases, where the digestive functions are perfect, a moderate employment of them is followed by an improvement of the general health. When they become rancid, or acted upon by heat, they undergo chemical changes which render them more difficult of digestion, and exceedingly obnoxious to the stomach. Bakers frequently employ rancid lard or butter in making their cakes, pies, &c., and which not unfrequently occasion distressing symptoms among children who eat them. Lard or butter, when in the least rancid, will change the blue color of litmus paper to a red. Good lard is white, inodorous, tasteless, and possesses a granular feel. Among the fat or oily articles of food which are offensive to dyspeptics and weak stomachs, may be named the following:—fat meats, marrow, oil, butter, livers, brains, yolk of eggs, milk, cream, cheese, buttered toast, melted butter, butter-crackers, pastry, marrow puddings, suet puddings, butter-sauce, salmon, herrings, sprats, eels, fried dishes of all kinds, gravies, oily seeds, as nuts, walnuts, cocoanuts, hashes, stews, broths, fat soups, and chocolate. Sometimes dyspeptics will be met with, whose stomachs are not injured by some one or more of these, but such cases are exceptions; for instance, the fat of salt pork, and of bacon will frequently be digested with perfect ease, where many other apparently more appropriate articles of food will oppress the stomach for hours. The same articles, rare broiled, and given in small quantities at a time, to children laboring under cholera-infantum, have remained upon the stomach, when everything else would be rejected, or, if retained, pass through the alimentary canal undigested; and I have frequently witnessed excellent results from a similar diet in convalescence from fevers and other exhausting diseases.

CHAPTER IV.

Articles of Vegetable Diet.

THE varieties of food procured from the vegetable Kingdom, are much more numerous than those had from the animal, among the most important of which are, the Cereal grains, as wheat, corn, oats, barley, rye, rice, &c., and the nourishing power of which depends principally upon the gluten, starch, and gum, which form part of their composition. *Vegetable gluten*, or vegetable fibrin, is found in all farinaceous grains, as well as in several parts of many plants. Wheat contains much more of it than the other farinaceous bodies, owing to which, wheat flour forms a superior article to any other for the preparation of bread. Associated with starch, gluten is exceedingly nutritious.

Fig. 5.



Microscopic view of Starch.

Starch is likewise a proximate principle of various vegetables, especially wheat, rye, corn, barley, oats, rice, peas, beans, chestnuts, acorns, potatoes, &c., Wheat yields one of its purest varieties. It is very nutritious, although rarely used alone as food, except in the form of arrow-root boiled in water, and given to the sick. It also forms an excellent demulcent in various affections of the bowels, and is stated to be an antidote to the effects of an overdose of iodine.

Gum which is obtained from the peach, plum, cherry, and several other fruit trees, is also nutritious. The gum arabic of the shops, which is obtained from the Egyptian thorn-tree, has afforded nourishment and strength to large caravans travelling over the deserts. It is seldom used as diet, except in some cases of sickness, being principally employed in solution as a demulcent in irritation or inflammation of the lining membrane of the stomach and bowels and of other mucous surfaces.

Sugar is a well-known vegetable element, and is chiefly obtained from the sugar-cane, *saccharinum officinarum*, although it is contained in many other plants, and exists in most ripe fruits; it is also met, with in animal substances, as for instance, milk.

Sugar is usually considered a highly nutritive article of food; Liebig states it to be merely an element of respiration. It is of easy digestion, except among dyspeptics, with whom it may occasion acidity and flatulence, and when eaten in moderate quantities, in combination with other alimentary substances, it is very wholesome. Raw or brown sugar always contains more or less impurity, and is not so fit for general use as the purified or refined sugar. Many persons entertain the idea that sugar is injurious to the health and especially to the teeth, but this is an erroneous idea; during the seasons for making sugar, the negroes, and animals on the plantations partake of the sugar-cane juice and molasses very freely, and they invariably fatten in consequence thereof, and their teeth are white, and in the very best condition. Sugar is a destroyer of worms in children, and an appetite for it, should rather be encouraged and moderately gratified, than repressed.

The teeth may be injured by allowing sugar to remain between them or in their interstices, with other matters which undergo decomposition, giving rise to acids which destroy their enamel. And the injury to health among children, arises not from the sugar, but from the many vile additions which are made in the form of sugar-plums and candies, for the purpose of pleasing the eye, or tickling the palate. For instance, the various colors are made by adding several poisonous substances to the sugar, while it is otherwise rendered obnoxious to health, by the addition of spices, liquors, acids, and other deleterious agents.

The yellow color is produced by chrome yellow, a preparation into which lead enters, as well as gamboge, which latter is a powerfully drastic and irritating purgative. Red, by vermilion, a mercurial preparation which is frequently adulterated with red lead. Green, by Scheele's green, in the composition of which arsenic and copper enter; and so of the other colors.

To detect these poisons, throw some of the green candy on hot coals, and if a garlicky odor is observed, it is due to the presence of arsenic. If aqua ammonia be dropped upon the candy, and changes its color to a blue, copper is present. If the candy be dissolved in water, and sulphureted hydrogen be added to it, the presence of lead will be known by the liquid becoming of a black or dark brown color.

Molasses or *Treacle*, is a dark brown, viscid fluid, possessing properties somewhat similar to those of sugar. It is a syrup containing uncrystallizable saccharine matter, mucilage, free acid, and water; it is generally of easy digestion, and used in moderate quantity forms an excellent addition to bread, especially for children, with whom it will be found more wholesome than butter, or pastry, rich cakes, &c.

Honey is a substance prepared by the honey-bee, *apis mellifica*, from the nectaries of flowers. It is a thick, viscid, colorless or pale straw-colored fluid, of a peculiar fragrant odor, and an agreeable sweet taste. It contains two saccharine principles, an aromatic principle, wax, an acid, and a little mannite. When eaten in moderation with bread, it is wholesome and nutritious, though it is very apt to occasion griping, looseness, and other unpleasant symptoms, among persons of weak stomachs, and dyspeptics.

Honey is frequently adulterated with starch, sand, flour, &c., for the purpose of improving its color, or increasing its weight; similar adulterations are practiced with sugar. Sand may be detected, in either sugar or honey, by dissolving the article in water, when the sand will sink to the bottom. The tincture of iodine added in small quantity, to the water in which the article has been dissolved, will be changed to a blue color if flour or starch be present. When honey is very thin, and does not readily deposit granular crystals, it is owing to the addition of water to increase its bulk, and in this condition it will rapidly undergo fermentation in warm weather, acquiring a deeper color and a pungent taste.

Wheat, (*Triticum hybernum*), forms one of the most valuable and nutritious articles of food; there are several varieties of it, from which flour is manufactured, but all of which contain starch and gluten in larger proportion than any other seeds. One hundred parts of wheat, contain, according to its quality, from 67 to 72 parts of starch, from 9 to 12 parts of gluten, from 4 to 8 parts of sugar, from 2 to 6 parts of gum, and from 8 to 12 parts of water, beside the bran, which also varies in its proportions. Wheat flour is formed by grinding the seeds, and passing the fine powder formed, through cloth sieves of different grades of fineness; the finest powder being used, as a *superfine* or *extra-superfine* flour, in the preparation of bread, cakes, &c., while the coarse powder, known as *middlings*, is principally consumed in the manufacture of hard or sea biscuit. The husks or shells which remain

in the bolting machine are called *bran*, and constitute the least portion of the grain, say from 25 to 33 per cent. Bran made into a decoction with water, is frequently used as a beverage in acute diseases; it contains some nutriment, and is also said to possess laxative properties.

Oats, (*Avena Sativa*) are nearly, if not quite equal to wheat, in point of nutrition. Oat-meal forms a large part of the diet of Scotland, Ireland, and the north of England; countries which have always produced a race of healthy and vigorous men. It may be used either as a gruel, or in the form of unfermented bread. When made into fermented bread, in the ordinary way, it is unpalatable and of difficult digestion. Unfermented oat-bread is made by boiling the meal with water, forming it into thin cakes, and baking or roasting them; however it is apt to disagree with those unaccustomed to it, as well as with dyspeptics, occasioning heartburn, and other unpleasant symptoms.

Oat-meal gruel is made by boiling oat-meal in water, its consistency depending on the condition under which it is employed as a diet, and which may be regulated by using a smaller or larger quantity of the meal as may be required. It forms a very nutritious and salutary food for children and convalescents, as well as for females shortly after confinement, and is much preferable with such persons to either tea or coffee. The addition of milk, or milk and sugar, increases its nutritive powers, and a little grated nutmeg improves its flavor. Sometimes, raisins are added for a similar purpose; and when used in the sick room, it may be rendered very palatable by acidulating a very thin gruel with lemon-juice. It is much more nourishing for the sick, than the starchy preparations, arrow-root, sago, tapioca, &c. Oat-meal is not employed as much in this country as Indian corn meal.

Barley, (*Hordeum Distichon*) of which there are several varieties. This plant is cultivated in almost all civilized countries, and is prepared for use under the name of *pearl-barley*. To obtain this, the husks of the grain are removed, and the remaining parts are rounded and polished into small, pearly white grains. When the pearl-barley thus made is ground to powder, it is called *patent barley*. The husk of barley is slightly acrid, but, when deprived of this, the seeds are very nutritious, less so, however, than wheat, and are said to be more laxative than the other cereal grains. Bread made of barley is not very palatable nor wholesome, and digests with more difficulty than wheat bread. The best form for using this article is that of *barley-water*, which may be made according to the following receipts, either in the simple form, or as a compound preparation:—

1. *Simple barley-water* may be prepared by taking two ounces and a half of pearl-barley, and washing it clean in some cold water; then add half a pint of water to it, boil for about fifteen minutes, pour it off and throw the fluid away. Then to the barley thus prepared, add two quarts of boiling soft water; boil down to two pints, and strain. If required, this may be flavored with sugar, or a few slices of lemon peel. It forms an excellent drink in fevers and inflammatory diseases, assuaging thirst, and acting as a demulcent and slight aperient. When mixed with an equal quantity of

fresh cow's milk, and a small portion of sugar of milk, simple barley-water forms a good substitute for breast-milk, and may be given to infants who have to be brought up "by hand." An ounce of gum Arabic dissolved in a pint of simple barley-water, is very useful in gravel, gonorrhea, and strangury from a fly, blistering plaster.

2. *Compound barley-water* is made by adding to a quart of simple barley-water, two ounces and a half of figs, sliced, two ounces and a half of raisins, stoned, half an ounce of liquorice root, sliced and bruised, and a pint of soft water. Boil these together, down to a quart, and then strain. It is used similar to the above in febrile and inflammatory affections. *Pearl-barley* is frequently added to soups and broths with advantage.

Rye, (*Secale Cereale*), is cultivated in nearly all civilized countries. It contains less gluten than wheat, and consequently its nutritive properties are inferior. Bread made of rye is not so suitable for dyspeptics and sedentary persons as that made from wheat, because it is of more difficult digestion, is apt to acidify upon the stomach, and to irritate the bowels, frequently causing diarrhea. A mixture of rye and wheat made into bread, is more palatable, wholesome, and digestible, than when rye alone is used. Rye is subject to a disease producing the *spurred rye*, or *ergot*. Should it be eaten in this state in any quantity, it is very unhealthy, producing serious forms of disease, as convulsions and mortification of the lower limbs.

Buckwheat, (*Polygonum Fagopyrum*), is an Asiatic plant, cultivated in many parts of the United States. The flour or meal prepared from it may be formed into bread, but it is neither palatable nor wholesome. It is principally used in this country in the form of buckwheat cakes, which though very palatable, contribute a very meager amount of nourishment, and are of difficult digestion. With some persons a cutaneous eruption always follows their use; probably this, and the other unpleasant consequences arising from a use of buckwheat cakes, are owing to the large quantity of melted butter, grease, wines, &c., which are eaten with them. Dyspeptics and invalids should always shun them. Buckwheat flour may be used to recall the flow of milk in the breasts of nurses where it has disappeared for several days, as follows:—To any quantity of buckwheat flour, add a sufficient quantity of buttermilk to form a poultice; warm it, but do not boil it, or make it hot. Apply it thus warm over the whole breast, and renew it every four or six hours. Sometimes it requires to be used thus three or four days before its effects will be produced; usually, however, twenty-four hours will be sufficient.

Rice, or the seeds of the *Oryza sativa*, is a well-known grain, extensively raised in the East, and also in the United States, and some parts of Europe. In the tropical countries of the East, it is the principal food on which the inhabitants subsist, being used and cultivated, and answering the same intentions as wheat or bread with us. Although a nutritious article, yet it is less so than wheat. Used alone, it is apt to "turn sour on the stomach," and should therefore be eaten with bread, milk, or meat. When boiled

with milk, eggs, and sugar, it furnishes a very light, savory, and salutary food; it may also be used in a variety of forms, as boiled rice, eaten with milk or meats, rice-puddings, rice-cakes, and rice-water or mucilage of rice. It is supposed to possess a binding or constipating quality, on which account it is prescribed as a diet in dysentery and diarrhea, and will be found in most cases, sufficient to check the diarrhea so common to eastern people, who for the first time make use of our western river waters. Rice-water, and rice-jelly, are very useful in acute and chronic affections of the alimentary canal; nourishing while they soothe the irritated or inflamed mucous membrane. The jelly may be made by boiling two ounces of rice flour, and three ounces of loaf sugar in a pint of water, until it becomes thick and transparent, flavoring it with rose, or orange-flower water. Or it may be made by slowly and carefully boiling clean rice in a small quantity of water, until it is reduced to the state of pap or jelly, when it may be sweetened and flavored with vanilla, essence of lemon, &c.; on cooling, this assumes the form of a jelly, and may be eaten alone or with milk, and in convalescence from exhausting diseases, dyspepsia, summer complaints, &c.

Indian Corn or *Maize*, (*Zea mays*), is extensively used in the United States, as well as in Asia, and some parts of Europe, as an article of food. Corn contains no gluten, and hence its meal does not *rise* or undergo fermentation, as with wheat and rye. A yellow oil is obtained from it, which may, perhaps, account for its disagreeing with many persons. It furnishes a very healthy, nutritious, and palatable diet, and is especially adapted for the support of the energetic and hard-working classes.

With some persons, and especially those who are not accustomed to its use, corn bread is at first rather unpalatable, is apt to turn sour on the stomach, and also occasion diarrhea, and sick-headache; but by persevering in its use they soon learn to prefer it to wheat bread as a common diet. It is certainly preferable to the wheat bread as at present made by bakers, which may be said to occasion at least one-third of the sickness met with in cities. Indian meal may be made into bread, or pudding; in the form of mush and eaten with milk, it forms a very palatable and nourishing food. The young ears boiled, are in general a nutritious and digestible article of diet, but should be eaten with caution by those predisposed to, or suffering from a disease of the bowels. *Indian meal gruel*, is frequently more grateful to the sick than that made from oat-meal, and is a useful diet for convalescents from febrile diseases, as well as for those who have committed excesses in eating. Some convalescents find it more palatable and agreeable when seasoned with a proper amount of salt, instead of sugar. The proper way to make Indian meal gruel, is to boil a small quantity of the meal in boiling water, for about half an hour, stirring it frequently, and seasoning it lightly with salt,—more may be added afterward if required. If milk is not forbidden, a teacupful may be boiled with a pint of the gruel, which should not be too thick. An infusion of parched corn, will allay the nausea and vomiting attendant upon many

diseases; it may be drank freely. The Italians form a dish called *polenta*, which is made by mixing corn meal with cheese, and baking it into a kind of pudding; perhaps this may be useful with those in whom corn alone produces diarrhea.

A bushel of corn weighs about 60 pounds, which at fifty-six cents would be about one cent per pound, and one pound of corn cooked, will support a laboring man daily. If, however, to this be added potatoes which average about a cent per pound and of which from three to five pounds a day are sufficient for an adult individual, we find that six cents a day is fully adequate for the strength and nourishment of one person; or \$21.90 per year. And a family of five persons, consisting of a man, his wife, and three children, can be well and thoroughly supported on a solid diet, amounting to about \$75 per year. Of course, milk, fruits, &c., are not included in this estimate, but their cost is much greater in cities than in the country.

Bread may be made from rye, oats, rice, barley, and other plants containing starch, gluten, and saccharine matter: but that which is more universally used as an article of diet is prepared from wheat flour. The usual method of making bread is to mix water with the flour in sufficient quantity to form a dough of a thick pasty consistence, having also added a small quantity of salt to improve the flavor and color of the dough, as well as to impart stiffness to it. To this *yeast* or *leaven* is added, and the whole is then set aside for five or six hours in a place not too cool, to undergo fermentation, after which it is divided into the proper sizes, and baked in an oven having a temperature about 448°. After the bread has been baked, if, it has been properly fermented, it will be much more easily digestible than the flour from which it was made, owing to its having undergone a change which will render it impossible to detect its original ingredients. Thus, the yeast or leaven causing a vinous fermentation of the saccharine principle of the flour, carbonic acid gas is given off, and alcohol is formed. The tenacity of the dough, which is occasioned by the gluten, prevents the escape of the carbonic acid, the gluten is thereby expanded, the whole mass becomes extended and swollen, forming numerous small cells in a light and spongy dough. The alcohol which is set free during the baking of the bread, may be collected, if desired, by a proper contrivance.

Potatoes, though less nutritive than wheat flour, are frequently used in making bread, they assist fermentation and serve to render the bread lighter, and if not added in too large quantity they are not objectionable.

There is no doubt but that the affections of the digestive organs, nervous disorders, kidney and skin diseases met with in the cities of this country, are in a great measure, owing to the common use of bakers' bread instead of that of domestic manufacture. Not that bakers cannot make good bread, but that *they do not*, from the fact that an adulterated bread pays better. The objections against bakers' bread, are, principally, two:—its adulteration, and its improper fermentation. The most common adulteration is alum, which is added to improve the firmness and whiteness of

the bread; and, on this account, an inferior flour is made use of, which undergoes fermentation rapidly, and becomes acid—thus accounting for the sour bread so frequently met with at the baker's shop. Bread made thus, may be eaten warm or recent without discovering its acidity, but after it is twenty-four or thirty-six hours old, this difficulty is very manifest. So that we not only have the evil consequences arising from the daily use of several grains of alum, but also from the acidified condition of the bread. And yet notwithstanding this deleterious adulteration we find the inhabitants of cities blindly and carelessly swallowing whatever is given them as bread by the bakers, without stopping a moment to enquire whether such kind of food is compatible with health and longevity.

It is a very common plan with many bakers to purchase old sour flour, which is entirely unfit for the sustenance of the human system, and mix it with new, garlicky flour, in the proportion of one barrel of the former to two of the latter. By this combination, the garlicky odor of the one and the acidity of the other, are almost entirely overcome, while a little alum added improves the whiteness and firmness of the bread. And this stuff is palmed off upon community to engender disease, because it puts a few more dollars into the bakers' pockets. This fact is well understood by flour-dealers.

During our warm summer months, we hear a great deal said about eating those delicious fruits which nature so lavishly bestows upon us for the purposes of health and nourishment in these seasons. Diarrhea, cholera-morbus, summer-complaints, and cholera, are all attributed to these really healthful agents, while the adulterated cake and bread of the baker, the excessive use of fat, gross meats, &c., are barely ever dreamed of as being the principal offending causes. When will the people learn and practice common sense in matters pertaining to health? A quantity of arsenic placed in our food causes death quickly, and the journals herald the awful results throughout the country, and community is shocked; but, that which slowly and gradually undermines life, occasioning diseases which do not appear to be the immediate result of any unhealthy principle in food, is hardly, if ever referred to, and the pernicious consequences are looked upon as a matter of course,—a fate to which mankind is inevitably doomed,—and the only notice observed, is a quiet statement, that Mr. So and So died of dyspepsia, or cholera-morbus, when the probable fact is, he died of a continued use of adulterated and otherwise deleterious bakers' bread. But this is a money-making country, and health and life, and all matters relative thereto, must be placed aside when dollars and cents are brought into view. In my own practice I have frequently attended families in whom, and especially among the children, symptoms have presented themselves for which I could not readily account, and which have either proved intractable to medicine, or, if yielding for a time, have been certain to make their reappearance. Upon persuading the heads of these families to make their own bread and cakes, and refrain from using those of bakers' manufacture, all the unpleasant symptoms have been permanently removed, and without the assistance of a particle of medicine.

Carbonate of ammonia is frequently added, by unprincipled bakers, to sour flour, for the purpose of rendering the bread made from it light and porous. Sulphate of copper, or blue vitriol, is also added to bread previous to its being baked for the purpose of disguising the quality of the flour from which it is made; this may be detected by soaking the bread in rain water, filtering and adding to the water a small quantity of a solution of ferro-cyanide of potassium, (an article which can be had at any drug store, and which being unsafe, should be kept out of the reach of servants and children,) when, if any copper be present, there will be a reddish-brown precipitate.

Alum may be detected in bread, by the following method: Soak a small quantity of the suspected bread in pure water, squeeze the mass through a piece of cloth, and allow it to stand until the liquid has become clear and transparent: carefully pour off a portion of this, and add to it a few drops of solution of muriate of lime, which can be obtained at any drug store. If alum be present, a more or less dense white cloud will be exhibited, which on standing will be precipitated in the form of a white powder, which is sulphate of lime. The action in this case is thus,—the sulphuric acid of the potassa and alumina of the alum, unite and precipitate with the lime of the test, while the muriatic acid of the latter combines with the alkalies of the alum, and remains dissolved.

Sour bread may be detected by soaking crumbs of the bread in water, and then applying a piece of blue litmus paper to it, which will be reddened if acid be present. The litmus paper may also be obtained of the druggist.

Good wheat flour may be known by mixing it with a small portion of powdered guaiacum in water; if it be good, and rich in gluten, a fine blue color is produced, but if bad, the blue is hardly apparent.

The fermentative process would if allowed to continue, ultimately terminate in complete decomposition of the original elements of the flour, and putrefaction, but the heat of the oven, by removing the moisture, arrests any further fermentation. It is, however, frequently the case, that, in warm weather when the season is damp, bread absorbs moisture from the atmosphere, and quickly passes through the alcoholic, acetous, and putrefactive stages of fermentation. Weak stomachs, and those disposed to an excess of acidity are very apt to occasion these results, which may, however, be avoided, by thoroughly toasting the bread, previous to eating it.

Although bread is very nutritive, yet alone it is not capable of sustaining a prolonged life, and the prison diet of bread and water is a very improper one, on this account. The most nutritious and digestible bread, is that which is made from good, fine wheat flour. *Brown bread*, sometimes called *Graham bread*, made from wheat flour containing bran, is very useful as a laxative in cases of habitual constipation, in diabetes, and for sedentary persons. Sometimes, however, it will be found to disagree. The bran is indigestible, but in passing through the bowels, it acts mechanically upon their mucous membrane, in most cases, exciting them to a healthy action.—Hot rolls, hot biscuit, and warm or fresh bread, are especially unwholesome

and indigestible, though healthy stomachs frequently manage to digest them when they are not too frequently used; but invalids and dyspeptics should always avoid them. Bread is always better when it is eaten on the day following its preparation. For invalids, convalescents, and those of tender stomachs, *toasted bread* will be found a very useful article of diet. It is especially adapted for those upon whose stomachs bread, in its ordinary conditions, and most vegetables are liable to become sour, or produce flatulency and constipation. It should be eaten with a very sparing quantity of butter, which should not be placed upon it, till the toast is cold, otherwise, the heat will so change the butter as to render it difficult of digestion and very obnoxious to the stomach.

Mouldy bread, or bread made from diseased grain, as mildewed wheat, &c., is more or less deprived of its nutritive qualities, and is very apt to occasion serious symptoms, as, headache, thirst, dry tongue, colic, rapid pulse, stupor, diseased stomach, diseased kidneys, &c. The preparer or vender of diseased wheat flour should always be liable to some kind of punishment; for, he is more to be dreaded than the man who attacks one openly with an avowed intent to destroy life.

Biscuit is an unfermented bread, which is not apt to become acid in the stomach, and is therefore wholesome for children, and those whose stomachs are disposed to acidity. It frequently agrees better with the dyspeptic than fermented bread, and when reduced to powder, and formed into a panada with hot water, it forms a better article of food for an infant, than when the diet is made of fermented bread. When made with the addition of butter, biscuits are more difficult to digest, and are consequently injurious to dyspeptics, and those of weak stomachs. On this account *pastry* and all *cakes* containing butter or lard, are unhealthy, and should seldom be used—never, by invalids and children. These articles are very agreeable to the taste, and are apt to be freely indulged in, especially by the young; their common use occasions disease of the stomach, disease of the skin, inflammatory affections, and a disposition to apoplexy in certain constitutions. Children who are indulged in cakes and pastry, are almost always in the physician's hands. *Pancakes* and *fritters*, made by mixing flour and yelk of eggs into a paste, and frying in lard, may produce little inconvenience to persons whose digestive powers are energetic and strong—yet they are very indigestible, and should be carefully avoided by the convalescent, the sedentary, the dyspeptic, and those liable to attacks of apoplexy and epilepsy.

Puddings are of various kinds, those made of bread and milk, or of rice, are digestible, and may be partaken of, temperately, with benefit. *Paste puddings* or *dumplings*, are extremely indigestible and unwholesome, and should always be avoided by those of weak or impaired digestion. It is very doubtful whether a dough made of wheat flour and boiled is at all fit for food; it will always be heavy and extremely difficult to digest. The best puddings are those made of stale bread, sago, rice, or Indian meal, baked. The boiled dough of stews, soups, &c., is very indigestible, and unfit for weak stomachs.

Gingerbread composed of flour, molasses, ginger, and pearlash, is, when properly baked and eaten in moderate quantity, a useful article of diet for adults; often remaining on the stomach when all other articles of food are ejected, especially in instances of sea-sickness. It gently stimulates the stomach, and forms an excellent lunch for those who have to travel, or expose themselves to the early morning air before breakfasting. Children should use it very seldom, as all spices or stimulants are unnecessary, and hurtful to their stomachs. Ginger-bread made with butter, or eaten with it, is not readily digestible, and should not be used by dyspeptics, and those of delicate stomachs.

Sago is an article of diet prepared from the pith or medulla of the stems of various species of palms. There are three kinds met with, viz: 1st, Sago meal or flour, a whitish powder; 2d, Pearl Sago, consisting of small yellowish, or pinkish grains, and 3, Common Sago, occurring in rather large grains, and being colored white on one part of their surface, and brownish on another. Boiled with water or milk, sago forms a light, grateful, nutritious, and easily digestible article of food, especially adapted to children, and convalescents from febrile and inflammatory diseases. It is considered, however, inferior to arrow-root for the diet of patients. Two ounces of Sago boiled in a quart of water until a mucilage is formed, may be added to a mixture of half a pint of Sherry wine, a half-ounce of loaf-sugar, a few drops of essence of lemon, and a teaspoonful of tincture of ginger. This forms an excellent cordial in convalescence from exhausting diseases, and may be used every four or five hours, in the quantity of a wineglassful at a time.

CHAPTER V.

Articles of Vegetable Diet Continued.—Fruits.—Nuts.—Condiments.

POTATO is the root of the *solanum tuberosum*, and was introduced into Europe as an article of food by Sir Walter Raleigh, about the beginning of the seventeenth century. At present it is one of the principal articles of diet in this country and Europe, and is extensively used among the poor and laboring classes. It is usually boiled or roasted, and eaten with animal food, to which it is a light, nourishing, and agreeable accompaniment. When fried, or finely mashed, it is not so digestible as when boiled or roasted, and frequently burdens and annoys the stomach. Those potatoes which are dry and mealy are superior to those which are firm and viscid. Potatoes contain water, starch, amylaceous fiber, ligneous matter, vegetable fibrin, vegetable albumen, gluten, fat, gum, vegetable acids, salts, &c. When boiled in water, the starch grains absorb the watery portion of the potato, swell up,

and distend the cells containing them, while the albumen coagulates and forms irregular fibers between the swollen starch grains, and finally, the cells in which the starch grains are contained, separate from each other, and when the process is completed the potato is mealy; if the process is incomplete, the potato is watery, or waxy. New potatoes are not so mealy as old ones, and consequently are not so easily digested. Potato, whether eaten raw or boiled, is an excellent anti-scorbutic, and has been found to cure scurvy, as well as to prevent it; and this influence probably depends upon the citric acid which is present in this tuber. *Potato starch*, in some respects, agrees with other amylaceous substances in its general dietetical properties; it does not, however, yield so firm a jelly as the majority of them, and is more apt to acidify upon the stomach than arrow-root.

The root of the *convolvulus batata*, known by the name of *Sweet-potato*, when properly roasted or boiled affords an agreeable and nutritious article of food, not so easily digested, however, as the common potato, and very apt to produce flatulence and oppress the stomachs of dyspeptics, convalescents, and those whose digestive organs are weak. It should always be eaten in moderate quantity. It contains farinaceous, as well as a large proportion of saccharine matter.

The fleshy, tuberculated roots of the *helianthus tuberosus*, a species of sun-flower known by the name of *Jerusalem artichoke*, are frequently boiled or roasted, and eaten as food. Properly prepared, they become mealy like the potato, with a saccharine taste, but are usually more watery and more productive of flatulence than that tuber. They may be classed with the potato as an article of food.

Cabbage, (*Brassica oleracea*,) of which there are several varieties, is much employed as an article of diet throughout the United States; and for healthy, hard-working persons, and those having good digestive organs, it forms an excellent accompaniment to a meal of animal food, especially when partaken of frugally. Not much nourishment is obtained from cabbage, and when eaten by dyspeptics, or those of delicate stomachs, as well as when eaten in large quantity by those with whom it might otherwise agree, it occasions an uneasy and oppressive sensation, with flatulence, colic, or cholera-morbus, on which account it should never be eaten by the invalid, or those who pursue sedentary and inactive occupations. For table use, it should be boiled in water until it is perfectly tender.

Cabbage leaves cut into slices, and deposited in a vessel in layers, each layer alternating with one of salt, and allowed to undergo acetous fermentation forms *sour krout*, or *sauer-kraut*. From five to seven weeks is required for this purpose, according to the temperature. This forms a good anti-scorbutic vegetable food for sailors on long voyages, and is an excellent addition to the meat diet of healthy, robust, hard-working persons. It should be eaten by no others, as it is liable to the same objections as boiled or raw cabbage. The Germans make much use of sauer-kraut cooked with some fat meat.

Cauliflower (*Brassica Botrytis-cauliflora*,) is a variety of cabbage, which

is probably more easily digested than any other; but it should never be eaten by those with whom cabbage is improper.

Broccoli, (*Brassica Italica*), another of the cabbage family, though very tender and palatable, is more liable to cause flatulency, colic, cholera-morbus, &c., than the other species, and consequently should be avoided by dyspeptics, and those of inactive habits.

Artichoke, (*Cynara Scolymus*) is a well-known garden esculent, being somewhat of a spinous or thistle-like plant. The part used is the fleshy receptacle, or *bottom* of the flower-heads, which is gathered before the flowers expand, and deprived of the thistles and seed-down; the base of the involucreal scales is also used. When thoroughly boiled, these form a tender, sweet, mucilaginous, nutritious and easily digestible article of diet; but when eaten with melted or drawn butter, they are rendered indigestible, and should not be used by those whose digestive powers are not strong and active.

Asparagus, or the young shoots of *Asparagus Officinale*, when thoroughly boiled, forms a delicious, wholesome, and easily digestible article of food; the use of it communicates a peculiar odor to the urine. It is usually eaten with toast and melted butter, the latter of which, although it may render it more agreeable to the palate, interferes with its ready digestibility.

Greens.—Under this head are comprised the young leaves or shoots of various plants, which are boiled and eaten with or without vinegar, during a meal of animal food; generally, they form a very agreeable and useful accompaniment. The leaves, &c., commonly employed are those of spinage, poke, turnip, dandelion, and radishes. The young leaves of *Spinage*, the *Spinacia Oleracea*, when well boiled, are the most healthy among all the vegetables used as greens; they have a laxative effect and are useful in cases of habitual constipation. The young and tender shoots of the *poke*, *Phytolacca decandria*, when properly boiled, form a delicious and healthy vegetable, very much resembling asparagus in its flavor. Care should be observed not to use them when too old, as they are then poisonous. *Turnip tops*, as well as *radish tops*, although frequently boiled and eaten as greens, are very apt to disorder the stomach. The young leaves of *dandelion* form an excellent vegetable for greens; they have a slightly diuretic influence. It must be recollected, however, that the above articles are not proper for dyspeptics and persons of inactive life, and will sometimes be found to disagree with the more healthy and active.

Beet, (*Beta Vulgaris*), the root of which, when well boiled, affords an excellent vegetable addition to meat diet. It is of a saccharine taste, red color, sometimes whitish, and contains a large proportion of saccharine matter. Its digestibility is lessened by eating it with vinegar.

Turnip, the root of the *brassica rapa*, when well-boiled, affords a moderate degree of nourishment, and is easily digested. Among dyspeptics and those of weak stomachs, it is apt to cause flatulence, more especially when not thoroughly boiled.

Parsnip, the root of the *pastinaca sativa*, contains a large proportion of mucilaginous and saccharine substance, rendering it a highly nourishing

article of diet, and one of easy digestibility, when thoroughly boiled. The peculiar flavor of the parsnip is owing to its volatile oil, which renders it offensive to many. Parsnips should be eaten when young; old roots are stringy, or contain too much fibrous matter, which interferes considerably with their digestibility.

Carrot, the root of the *daucus carota* is very similar in its properties to the parsnip. Its volatile oil also renders it disagreeable to many stomachs.

Radishes are the roots of the *raphanus sativus*; they are much used as a condiment, being eaten with salt without cooking. But little nourishment is contained in the radish, beside which it is a very indigestible article, and will occasion flatulence, colicky pains, oppression, &c., unless the digestive organs are very strong and active. When eaten at all, the young and tender roots, not *stringy* in the least, should be selected.

Cucumber, the green fruit of the *cucumis sativa*, is much used in the raw state during the summer months, as an agreeable addition to a meal. However, it possesses but very little or no nutritive properties, is very indigestible, and should be carefully avoided by dyspeptics and those who are subject to looseness of bowels, cholera-morbus, &c. Green cucumbers stewed, form an agreeable and digestible article of diet. Young cucumbers, called gherkins, are in great use as a condiment in the form of pickles, and are an excellent relish for strong stomachs, but should be especially avoided by those of weak digestive powers.

To improve the appearance of pickles they are sometimes prepared with the addition of some salt of copper, any one of which is highly poisonous. Frequently, pickles are unintentionally rendered poisonous by preparing them, or allowing them to stand, in copper or brass vessels, by which means they become impregnated with the poisonous metal. If a pickle containing the smallest quantity of copper be cut into pieces, and then placed in a glass vessel containing a mixture of equal parts, in bulk, of aqua ammonia and water, the clear liquid will become changed to a blue color.

Tomato, the fruit of the *solanum lycopersicum*, of which there are several varieties, is much used as an article of diet in this country. It possesses an agreeable acid taste, and forms a very healthy article of food, exerting a marked influence on the biliary functions. It is eaten in the raw state, and also boiled, the latter being the most agreeable and nourishing mode of preparation. When eaten raw, with vinegar, or combined with onions and cucumbers, it is rendered an indigestible and hurtful article of food, and in this condition should be especially avoided by persons having weak stomachs. *Pickled tomatoes* form an agreeable relish to many, but, like pickled cucumbers, possess no nutritive properties, and should not be used by the dyspeptic and delicate. The *egg-plant*, or fruit of the *solanum melongena*, is also a wholesome and delicious article of food, the value of which, however, is much injured by frying it in fat, a mode of preparation adopted by many persons.

Salsify, or *vegetable oyster*, the root of *tragopogon porrifolius*, which is long and tapering, somewhat resembling parsnip root. When properly prepared this is a nutritious article, having a mild, sweetish taste, somewhat resem-

bling that of the oyster. It is less digestible in the fried state, than when thoroughly boiled.

Mushroom, the *agaricus campestris* and many other species of fungi, are considered by epicures to be a very luscious and nutritious article of food. But they really possess little or no nourishment, are very difficult of digestion, are very liable to occasion severe purging and vomiting, and other disagreeable symptoms with certain individuals, and are often poisonous. Indeed, it is a very difficult matter to discriminate between those which are poisonous and those which are not. It is reported that some person in Europe has discovered a method by which all fungi may be deprived of their poisonous principles, and rendered safely edible, but I have not met with an explanation of the mode of effecting this; and even should this be done, it will in no way render them more easily digestible.

Onion, the bud of the *allium cepa*, and not the bulbous root as generally supposed. The peculiar odor and flavor of the onion is owing to an acrid, volatile oil, which contains sulphur. When eaten raw this oil is absorbed, increases the circulation, produces thirst, and communicates an unpleasant odor to the breath, perspiration and urine. Individuals whose digestive organs are weak should never eat raw onions, as they are apt to produce a sense of heat, uneasiness, and occasionally griping. When deprived of their oil by boiling or roasting, they form a mild, nourishing, and easily digestible vegetable for most persons. Raw onions digest with difficulty.

Leek, the *allium porrum*, and *Shallot*, the *allium ascalonicum*, possess similar properties, but are milder than the onion. They are frequently eaten raw as a condiment, and form an addition to soups and several sauces. They are more nourishing and more easily digested when boiled. As with onions, they are apt to produce flatulency, and oppress weak stomachs.

Garlic, the *allium sativum*, is more stimulating than the onion, and on account of its disagreeableness to many persons, it is seldom used as an article of food. Its properties are similar to those of the onion.

Peas, the *pisum sativum*, and its varieties, and *Beans*, the *phaseolus vulgaris*, *p. lunatus*, *p. nanus*, &c., contain considerable nourishment, but are not readily digested. They should be well boiled, and eaten only by those having strong digestive powers, otherwise they are apt to occasion flatulence, oppress the stomach, and produce other unpleasant symptoms. The green fruit, that is, the green pods of some beans, and peas, gathered before the seeds are fully matured, are more readily soluble in the stomach, when properly boiled, than the dried preparations.

Celery, the long leaf-stalks of *apium graveolens*, forms a pleasant salad to eat with meats. It is eaten raw with the addition of a little salt. Some persons add to it vinegar, pepper, and even olive oil, which renders it very indigestible. Care should be taken to select tender and recently gathered stalks.

Lettuce, the leaves of *lactuca sativa*, is a very common salad, and is eaten raw with salt. The addition of pepper, mustard, oil, &c., renders it extremely indigestible. As the leaves contain a bitter, narcotic principle, care must be taken to select only the young and tender leaves for the table. Persons

who are disposed to wakefulness at night frequently obtain sleep by eating lettuce a short time previous to retiring; those having a tendency to apoplexy should avoid the use of this salad. Although in very general use, it is the most objectionable salad we have, for the majority of persons.

Cresses, the leaves of *sisymbrium nasturtium*. These have a pleasant, pungent taste when eaten raw, and taken with moderation, form an excellent adjunct to a meat diet. As with the preceding salads; they will be found to disagree with weak stomachs, and are rendered indigestible by adding oil, vinegar, mustard, &c., to them.

Rhubarb, the leaf stalks of *rheum rhabonticum* and other species, are frequently used for making pies, tarts, &c. They possess a tartness and flavor extremely agreeable to some persons, and very unpleasant to others. On account of the oxalic acid contained in these stalks, their use is highly objectionable among dyspeptics, and those who are disposed to urinary depositions of oxalate of lime.

Apples, the fruit of *pyrus malus*, and of which there are numerous varieties. Ripe and mellow apples are agreeable and wholesome fruits, but on account of their firmness of texture, they are more slowly digested than many other fruits, and therefore are apt to disagree with the dyspeptic. Stewed, roasted, or baked apples are more easily digested than raw ones, and possess slightly laxative properties, which renders them of especial benefit to persons of constipated habits. Dried apples, when stewed, form an agreeable, nourishing, and aperient sauce. The skin or peel of the fruit should never be eaten, as it is indigestible. The acid contained in apples is called *malic acid*, and exerts a very beneficial influence upon the biliary and digestive organs.

It may be proper for me to make a few brief remarks at this place, on the use of fruits generally. Much has been said of the unhealthy character of fruits, and their tendency to produce diarrhea, dysentery, cholera-morbus, cholera, &c., and the idea is prevalent, that, on these accounts, they are rather dangerous articles of diet. This, however, is an extremely erroneous impression; there is no more agreeable, nutritious, and salutary food, than the ripe, edible fruits. When disease occurs from the use of fruit, the fault is always with the consumer, for several reasons, which I will state:—

1st. It is with fruit as with all other articles used as diet, a certain quantity will prove beneficial, but beyond this, the stomach is overladen, the digestive functions become deranged, and symptoms will follow more or less severe, in proportion to the amount of excess thrown into the stomach, and the peculiar condition of the biliary and digestive organs of each individual. Hence, fruit should always be eaten with moderation.

2d. Unripe fruit, and especially in the raw state, is always unhealthy. Fruit that is not matured, contains a principle which must be converted into *starch* or *sugar* before it is at all digestible, and if eaten before this change takes place, it undergoes decomposition in the alimentary canal, setting free irritating gases, which, together with the undigested particles, give rise to disease, by producing irritation of the mucous membrane.

Many persons have so little control over their appetites, and are so little governed by reason, that, whenever fruit is brought to market, no matter how unripe it may be, they evince a species of insanity to obtain it, and it seldom happens that they escape some unpleasant symptoms, after having partaken of it. Again, when ripe fruit is collected for market, it is almost always the case that there will be found among it more or less that is unripe; these being eaten together by the consumer, give rise to bowel complaints, and this is one great cause of such diseases among those who profess to have eaten only moderately, and of ripe fruits. Hence, ripe fruits only should be eaten, being careful to remove from the fruit obtained in market or elsewhere, every vestige of immaturity.

3d. Fruit that is offered in the markets of cities and towns, although it may have been collected when fully matured, is frequently kept until decomposition commences, and if purchased and eaten in this state, it is almost certain to cause disease. This is more especially the case with berries, and many vegetables, which the sordid huckster will dress up so as to have them present a fair outside appearance, and thus impose upon the purchaser. Hence, no fruit should be eaten except that which has been recently gathered, and in which the process of decomposition has not commenced.

4th. Fruit will prove injurious even when ripe, if eaten at improper times, or when combined with certain other kinds of food in the stomach. Thus, I have known fatal cholera-morbus to follow the eating of a quantity of peaches after having previously partaken of ice-cream, and in a person with whom either of these articles separately, would have produced no evil results. I have also known unpleasant consequences to follow the use of certain kinds of fruit after having eaten custard, soup, fish, milk, &c., &c. This influence will be found to vary in different persons, being more constant among those whose digestive functions are debilitated; consequently, every person should endeavor to remember the kind of fruit and other food, which disagree with him when placed together, or shortly after each other, within his stomach.

Fruits are especially adapted for use during the season of their maturity; they are agreeable, nutritious, cooling, and also exert a sanative medicinal influence upon the system; some increase the action of the liver, some that of the bowels, others again influence the kidneys, and nearly all of them have a salutary action upon the blood. According to the above observations, they should never be eaten in large quantity, but in moderation, and not then unless they are thoroughly ripe, are of recent gathering, (with the exception of a few, as apples, &c.,) and are compatible with the condition of the stomach, or the articles already contained in it. And that city is not to be envied, whose legislators are so ignorant, and so regardless of the lives of their fellow-citizens, as to permit hucksters to endanger them by keeping stale and decomposed vegetables or fruit for sale; more rigid attention to the condition of articles sold in our markets would tend materially to lessen the disease and mortality of our cities. If but one-

fourth of the time now devoted to the accumulation of wealth was bestowed upon these matters of hygiene, what a robust and long-lived people would be our successors!

Pears, the fruit of *pyrus communis*, and other varieties. Ripe and mellow pears, have a tender, juicy pulp, and an agreeable taste, and are more easily digested than apples. In other respects, their properties as a diet are similar to those of apples. They also contain malic acid, but not so abundantly as apples. Their digestibility may be much improved by baking or roasting with sugar or molasses.

Peach, the fruit of *amygdalus persica*, contains sugar, gum, pectine, malic acid, &c., and is a most delicious, as well a most healthful fruit; when eaten ripe and temperately, it will seldom produce any unpleasant results, except among gouty individuals, and those disposed to looseness of the bowels. The outer skin is not digestible, and should never be eaten. Peaches, and indeed any kind of fruit, should never be partaken of after a hearty dinner, as they will be apt to occasion sour stomach, flatulence, and other disagreeable symptoms. Stewed peaches, flavored with sugar, possess laxative properties, and are of service to convalescents, and those subject to constipation.

Plums, the *Prunus domestica* and other varieties, are wholesome and nutritive, when they are fully matured and mellow, and are eaten in moderation. But when eaten freely, or in an unripe condition, they are very apt to cause diarrhea, dysentery, and other disordered conditions of the bowels. The outer skin is not digestible, and should not be eaten. Cooked plums, or preserved plums, form a delicious dessert, and are very beneficial in cases of fever.

When plums are dried, they are called *prunes*, in which state they are not so easy of digestion as after having been cooked. Cooked or stewed prunes are laxative and nutritious, and are useful in cases of constipation, and during convalescence from acute attacks. An infusion or tea of prunes forms a very refreshing and beneficial draught for febrile patients.

Cherries, *cerasis vulgaris*, and other varieties, when perfectly ripe, and partaken of with moderation, are very wholesome; but they will frequently be found to disagree with some individuals, even when used in the smallest quantity, producing acidity, flatulence, colic, and diarrhea, especially among dyspeptics, and those of weak stomachs, and which may in some measure, be owing to the indigestibility of their outer skin. Ripe cherries contain sugar, gum, water, malic acid, &c., in various proportions, according to the varieties of the fruit, of which there are many. Stewed or cooked cherries are more wholesome and digestible than the raw fruit. The stones or kernels of cherries, as well as of all other fruits, grapes, &c., should never be swallowed, as they frequently occasion inflammation or other difficulty of the bowels, terminating fatally, which is owing to their being retained in the folds of the intestines, or the appendix cæci.

Dates are the fruit of the date-palm, *phoenix dactylifera*, and are always brought to this country in the dried state. They contain a large amount

of sugar, and are nutritious, but are apt to disagree with weak stomachs and dyspeptics. In habitual constipation they will be found useful, from their laxative properties, in all persons with whom they agree.

Quince, the *cydonia vulgaris*, should never be eat in its raw state, as it is extremely unwholesome and indigestible. When stewed alone, or with other fruits, as pears, apples, &c., or made into preserves, it forms a delicious dessert for most persons. Quince juice and the preserved fruit possess astringent properties, and are useful for persons subject to looseness of the bowels. The seeds of quince contain a large amount of mucilage.

Red currants, the fruit of *Ribes rubrum*, contain sugar, citric and malic acids, gum, vegetable jelly, &c. The outer skin and the seeds are indigestible, but the pulp of the ripe fruit when eaten in moderation is wholesome and slightly nutritious; eaten rather freely, currants are laxative. A very delicious jelly or jam is made from them, which forms a cooling and beneficial diet for febrile patients. *Dried currants*, on account of the skin and seeds are not readily digestible, and frequently produce more or less irritation of the alimentary canal. *Black currants*, the fruit of *Ribes nigrum*, possess properties somewhat similar to those of the red. Both kinds are diuretic.

Cranberries, the fruit of *oxycoccus palustris*, and *o. macrocarpus*, are much employed in this country, as a sauce to be eaten with game, poultry, fat meats, &c. They are always cooked or made into a jelly, and form a wholesome and nutritious article, possessing a delicious flavor. They are not easily digestible when eaten raw, but are most generally harmless when made into a jelly, or cooked with sugar. Cranberry jelly is a cooling and refreshing article for patients laboring under febrile diseases.

Gooseberries, the fruit of *Ribes grossularia*, and other varieties, contain malic and citric acids, sugar, gum, lime, &c. When perfectly ripe, the pulp of the fruit forms a healthy and delicious article; the outer skins are indigestible, and should not be swallowed. As with all kinds of fruit, gooseberries will be found to disagree with some persons, especially when eaten raw. Stewed with sugar, or otherwise cooked, they are more easily digested, and less apt to disturb the bowels.

Whortleberries, the fruit of *vaccinium resinsum*, and other varieties, are a very wholesome article, having a rich and delicious flavor. They possess cooling and diuretic properties, and are frequently employed in disorders of the urinary organs, scurvy and dysentery, either eaten alone, or with milk and sugar. They are generally of easy digestion. Dried whortleberries are diuretic, and when cooked, form a wholesome sauce or dessert during the winter season. The outer skin of these berries is much more digestible than that of the preceding fruits.

Grapes, the fruit of *vitis vinifera* and other varieties, are among the most delicious and salutary fruits of summer. When perfectly ripe, they contain a large amount of sugar and mucilage, with malic and tartaric acids, lime, potash, &c., and form a nutritious and refrigerant article. The sweeter kinds

of grape are the most nourishing, and may be used as a dessert, to allay thirst in acute diseases, and to promote the action of the bowels, as well as of the urinary organs. There is, probably, no fruit so acceptable and beneficial to the stomach of the dyspeptic, as a general rule, than the grape, when eaten ripe and in moderation. The skin and seeds of grapes are frequently eaten, and as often give rise to severe and even fatal disease of the bowels; they are indigestible and should always be rejected.

When grapes are dried, they are termed *raisins*, in which state they are not as digestible as in the recent state, on account of the seeds and toughness of the skin; the pulpy substance, however, is wholesome and nourishing. Raisins should never be eaten by dyspeptics and persons of weak stomachs. They are frequently boiled in gruel and other drinks for invalids, to which they communicate an agreeable flavor.

Figs, the fruit of *ficus carica*, contain, when ripe, a large amount of sugar, with mucilage, gum, phosphoric acid, fatty matter, &c., and form an agreeable and wholesome food. The dried fig, more frequently met with in this country, is more easy of digestion than most of the dried fruits, but should be eaten in moderation, as otherwise it is apt to occasion flatulence, griping, and other intestinal derangements. Dried figs being laxative are used with advantage by persons of constipated habits. Figs roasted or boiled, and split in two, with the pulpy surface applied, are a popular poultice for gum-boils.

Oranges, the fruit of *citrus aurantium*, contain malic and citric acids, mucilage, albumen, sugar, water, &c., and are a most luscious fruit, allaying thirst and diminishing excessive heat of the body; for which purpose it is frequently given to patients laboring under acute diseases. The only part of the orange which should be swallowed is the juice; the pulp in which the juice is contained, the white, tough rind, the outer yellow rind, and the seeds, are indigestible, and should never be eaten. The outer rind, or orange peel, is much used on account of the oil contained in it, to communicate a flavor to various preparations.

Lemons, the fruit of *citrus acida*, contain a large proportion of citric acid, with malic acid, gum, bitter extractive, &c. The juice is the only part which may be taken internally, and when taken in moderation, furnishes an agreeable addition to many draughts, and is much used in this way to allay thirst, and as a refrigerant in acute diseases, and in hemorrhages. It is also very beneficial as a beverage in scorbutic and putrid diseases. When lemon juice is added to a sufficient quantity of water, and the mixture is sweetened with sugar, it forms the delicious and refreshing beverage known as *lemonade*. The lemon peel is used for the same purposes as the orange peel. Citric acid is frequently employed as a medicinal substitute for lemon juice, but is inferior to it, being deprived of the malic acid and mucilage which enters into the latter; the addition of an eighth or tenth part of alcohol or brandy to lemon juice, will preserve it for a long time.

Limes, the fruit of *citrus limonium*, are somewhat similar in their properties and uses to those of the lemon, being, however, more intensely acid,

on account of the different properties of their constituents. When the juice of either of these fruits is used freely, or habitually, it is apt to occasion pain and irritation of the bowels, diarrhea, tuberculous disease, and derangement of the renal organs. A most pernicious habit, destructive to beauty, health, and life, is pursued by many young females, who, under the impression that a tendency to corpulency will be overcome, or that their skin will become improved and made fairer, make excessive use of lemon juice, lime juice, vinegar, pickles, and similar articles. I am acquainted with several females who have permanently injured their health by such a course.

Pineapple, the fruit of *bromelia ananas*, a native of the tropics, contains malic, citric, and tartaric acids, sugar, gum, peculiar aroma, &c. The ripe pineapple is one of the most delicious of fruits, and is beneficial in dysentery, and most acute diseases. The fruit as sold in this country, is picked before it is thoroughly matured, in consequence of which, notwithstanding its agreeable flavor, it is quite indigestible, and is apt to occasion considerable derangement of the bowels, especially when it is freely partaken of. Pineapple juice forms a very agreeable wash for the mouth in fevers, when the tongue is coated dark, with sordes on the teeth.

Strawberry, the fruit of *fragaria vesca*, contains citric and malic acids in about equal proportion, sugar, mucilage, pectine, peculiar volatile aroma, pericarps, &c. Strawberry is a very delicious fruit, being wholesome and digestible, though destitute of much nutritive matter. When the ripe fruit is eaten in moderation, it seldom causes any unpleasant symptoms. Occasionally, persons are found with whom strawberries disagree; and they should never be eaten with cream by dyspeptics. Strawberry juice, or syrup, added to water, care being taken that the grains or pericarps are removed by filtering or expressing the juice or syrup through a piece of muslin, forms a refreshing and useful drink for febrile patients.

Raspberry, the fruit of *rubus strigosus*, contains citric and malic acids, pectine, sugar, volatile oil, mucus, red coloring matter, &c. This fruit is somewhat similar in its properties to the strawberry and may be used as a substitute.

Melons, including the musk-melon, *cucumis melo*, the water-melon, *cucumis citrullus*, the pumpkin, *cucurbita pepo*, and the squash, *cucurbita verrucosa*, with its varieties, are fruits much used in this country during the summer and fall months. The musk-melon and water-melon, contain sugar, pectic acid, mucilage, vegetable albumen, &c., and are very delicious fruits, when perfectly ripe. But they are not so easily digestible as many other fruits, and are very apt to occasion diarrhea, and other derangements of the stomach and bowels. Persons whose digestive organs are good may eat of them in moderation with benefit, but all others should be careful how they use them. The pumpkin and the squash, when boiled, are very wholesome, and when not eaten too freely, will agree with most persons.

Mulberries, the fruit of *Morus Rubra*, contain bitartrate of potassa, pectine, sugar, coloring matter, &c. They contain but little nutritive matter,

but agree with most persons when eaten in moderation; partaken of too freely, they are apt to cause diarrhea. Their juice forms a very pleasant drink for patients suffering with acute diseases, as it checks thirst and lessens febrile heat.

Tamarinds, the fruit of *tamarindus indica*, contain citric, tartaric, and malic acids, sugar, gum, pectine, bitartrate of potassa, &c. They are seldom met with in this country except as a preserve; in which form they possess slightly nutritive properties, and may be eaten in moderation with bread or meats. When eaten freely they act more or less powerfully upon the bowels. Boiling water poured upon them and allowed to cool, forms a very grateful drink for patients with febrile or inflammatory diseases, diminishing febrile heat and quenching thirst.

Oily seeds, as the walnut, hazel-nut, filbert, pistachio-nut, and cocoa-nut, contain vegetable albumen and caseine, which render them very nutritious. But, beside these, they also contain more or less fixed oil which impairs their digestibility, except with those persons whose digestive powers are active, and who partake of them sparingly, or with moderation. Dyspeptics and those of weak stomachs should not eat these oily nuts, as they will be found to irritate the stomach, occasioning heart-burn, acid eructations, pain in the head, oppression at the stomach, increased temperature of the skin, restlessness, and other disagreeable and even dangerous symptoms. When old or rancid, they are not fit to be eaten by any one. The cocoa-nut is almost indigestible; the milky fluid contained within the nut, forms a pleasant draught to allay thirst. Bitter almonds contain a poisonous principle, and when eaten in large quantities produce serious and even fatal consequences. These oily nuts are frequently added to the dinner dessert, but this is extremely improper and unhealthy, they should never be eaten by any one except when the stomach is empty, or not already filled with food.

Chestnuts possess a large quantity of nutritive matter, without any oil. When raw they are not readily digested, and occasion flatulence, griping, colic, and looseness of the bowels. Roasted or boiled chestnuts are much more easily digestible and nourishing, but should be avoided by dyspeptics and those of weak digestive functions, on account of their tendency to cause flatulency.

CONDIMENTS are those articles which are used with food for the purpose of seasoning it, or improving its flavor, favoring its digestion, and counteracting any deleterious properties connected with it. They are composed of alimentary substances, as Sugar, Salt, Oil, or Fats, vegetable Acids, &c., and those which are not nutritive, as Pepper, Nutmegs, Mustard, and other aromatics. When used in small proportion, condiments render the food more palatable and inviting, and undoubtedly assist its digestion; but the constant and excessive use of them, so commonly indulged in by the great majority of the present generation, is injurious to the whole system, debilitating the stomach, occasioning organic disease of the liver, impairing the peristaltic action of the bowels, producing various cutaneous

eruptions, and other disagreeable and sometimes serious maladies. Children and young persons should never use any seasoning in their food, except salt; the great mortality among the children of some families is owing to their being permitted to use "high-seasoned" food, rich pastry, rich cakes, much fat, &c.

"Condiments," says Dr. W. Beaumont, "particularly those of the spicy kind, are non-essential to the process of digestion, in a healthy state of the system. They afford no nutrition. Though they may assist the action of a debilitated stomach for a time, their continual use never fails to produce an indirect debility of that organ. They affect it as alcohol or other stimulants do—the *present* relief afforded is at the expense of *future* suffering. Salt and vinegar are exceptions, and are not noxious to this charge when used in moderation. They both assist in digestion—vinegar, by rendering muscular fiber more tender, and both together, by producing a fluid having some analogy to the gastric juice."

Condiments may be divided into,

1. Saline condiments, as common salt.
2. Acidulous condiments, as vinegar, lemon juice, and citric acid.
3. Oily condiments, as the fixed oils and fats.
4. Saccharine condiments, as sugar, molasses, honey, &c.
5. Aromatic and pungent condiments, as spices, essential oils, &c.
6. Sauces.

Common Salt or *Chloride of Sodium*, forms an essential constituent of the blood, and from which fluid the gastric juice derives its hydrochloric acid, and the bile its soda; hence its use is not merely for the gratification of the palate, but for the more important purpose of preserving health and maintaining life. It is, in fact, a necessary article of food, for which nature has furnished us an appetite. When more soda is taken into the system than is required for the vital processes, the surplus quantity is removed from the blood by the kidneys; but if its excessive use be continued and habitual, it will give rise to plethora, corpulency and some form of disease; consequently, salt should be eaten with moderation. Salt, to be eaten, should be free from the chlorides of lime and magnesia, which are frequently found in it, from carelessness in its manufacture; these may be detected by immersing a strip of litmus paper into a solution of the salt, when, if there is an excess of the chlorides present, the color will be immediately changed. Lime, or the carbonate of lime may be detected by the brisk effervescence which ensues on placing some of the salt in a little strong muriatic (hydrochloric) acid. The best and purest salt for table use, is that known as *fine table salt*; the coarser kinds are better for the preservation of fish and animal flesh.

The *vegetable acids* which are frequently used as condiments to food, form a valuable addition to fatty or gelatinous matters, when used in moderation; obviating any tendency to oppress the stomach, and aiding their digestion. Thus, the various sauces composed of acidulous vegetables, as apple-sauce, cranberry-jelly, &c., eaten with a meal of fat pork, venison, duck, geese, beef, &c., are very advantageous to digestion.

Vinegar is much employed with food as a condiment; when used in small quantities, it is a grateful and healthy article, allaying thirst and diminishing preternatural heat; the digestion of gelatinous and fatty meats is promoted by its use, and they become less likely to derange the stomach and bowels; the flatulence frequently following the use of raw vegetables, is usually prevented by the addition of vinegar, which also lessens or entirely removes the fermentation which some kinds of food undergo when taken into the stomach. In large quantities it interferes with the digestive process, and occasions considerable injury to the system. Its habitual use is also injurious, destroying the teeth, impairing the functions of the stomach, and giving rise to dyspepsia. It has been used to remove obesity, but its use for this purpose is as dangerous as that of other acids. (*See p. 69.*)

Unripe fruits preserved in vinegar, and termed *pickles*, are very indigestible, and should never be eaten. When eaten by dyspeptics, or persons of weak stomachs, or when taken in excess, they are very apt to cause disagreeable, and even dangerous results.

There are many frauds practiced in making vinegar, which may be detected as follows: Sulphuric acid or oil of vitriol is frequently added, and indeed, the vinegar is, at times, chiefly made of a diluted sulphuric acid; this may be detected by adding a solution of the acetate of baryta to the suspected vinegar, when a white precipitate of sulphate of baryta, not soluble in nitric acid, takes place, if sulphuric acid be present. When muriatic (hydrochloric) acid is the adulteration added, it may be discovered by the addition of a solution of nitrate of silver to a wineglassful of the suspected liquid, which will produce an abundant precipitate of muriate of silver, not soluble in nitric acid, but perfectly soluble in aqua ammonia. When the vinegar is adulterated with nitric acid, it may be detected in two ways. 1. Add a little common salt to a wineglassful of the liquid, saturate it by adding carbonate of potassa, and then evaporate to dryness. Upon the dry residue pour equal parts of sulphuric acid and water, through which some gold leaf has been diffused, and boil the mixture. If nitric acid be present, nitro-muriatic acid will be generated, in consequence of the decomposition of the common salt, and the gold leaf will be dissolved. (*Pereira on Food and Diet.*)

2. Place a small quantity of the vinegar in a tin cup, and put into it cuttings and scrapings of a common goose-quill; and then apply heat, and if the pieces of the goose-quill are stained yellow, nitric acid is present.

When oxalic acid is added, it may be known by adding together one part of aqua ammonia and two parts of the vinegar, then, if some lime water be added to the mixture, there will be a copious white precipitate of oxalate of lime.

The best and most healthful plan to procure good vinegar, is to purchase acetic acid,—one pint of which may be added to six of water, and thus form seven pints of strong vinegar for about fifty cents. This is about double the price of ordinary vinegar, but then it will always be known to be undiluted with any poisonous article. When cider vinegar is made, early cider is not so good for the purpose as the late.

Fixed oils, fats, and saccharine substances have already been referred to on pages 49, and 51—52.

Mustard, the ground seeds of *sinapis nigra*, is a wholesome condiment when used in moderation, especially for those whose digestive powers are weak, yet, there are many persons with whom mustard causes an irritation or burning sensation at the stomach and griping, even when used in the least quantity. The best method of preparing mustard for the table is, to mix the flour with water at the ordinary temperature of the atmosphere; for boiling, or uniting it with alcohol or acids, as vinegar, &c., impairs its active properties. Black mustard seeds contain a volatile oil, a fixed oil, sulphur, myronate of potassa, &c.

The ground mustard of commerce is hardly ever met with in a genuine state, being almost always combined with other articles, which, however do not render it poisonous. Thus, an excellent mustard is prepared by mixing 145 pounds of mustard flour, made by grinding together two parts of black and three of white seed, with 56 pounds of wheat flour to diminish the pungency, and two pounds of turmeric to improve the color; then to restore the acrimony without the pungency, one pound of chilly pods and half a pound of ginger are added.

Some manufacturers add bay salt, cayenne pepper, yellow ochre, &c. This last named article is injurious, and may be detected by placing some mustard containing it in an iron vessel, and submitting it to heat until the mustard has burned away; if any residue is left, it is ochre. The same may be detected by placing some of the mustard on an iron or platinum spoon, and by means of a blowpipe drive the flame of a lamp upon it until it is burned; but the ochre will not burn or be consumed.

Horseradish, the root of *cochlearia armoracea*, contains a very pungent volatile oil, bitter resin, starch, gum, sugar, albumen, acetic acid, &c. It is usually grated or scraped, and added to vinegar, when it forms a wholesome and stimulating condiment to be used in moderation with animal food. When used too freely it is very apt to produce an irritation or burning sensation at the stomach, griping, &c. It is especially useful for those whose digestive powers are torpid, who are disposed to local palsy, or who are dropsical, being a stimulant, diuretic, and antiscorbutic agent. The root when dried loses its volatile oil, and consequently its pungency.

Ginger, the root of *amomum zingiber*, contains a volatile oil, two resinous substances, gum, starch, sulphur, acetic acid, &c. It is a stimulating aromatic, increasing the secretion of the gastric juice, and the excitability of the muscular system of the bowels, and also removing flatulence. Used in moderation it is a very valuable and healthy condiment, and should be used more especially by persons troubled with flatulency. Persons whose digestive organs have been impaired by the use of intoxicating drinks, and who have determined to abandon them, will find much benefit from the occasional use of ginger, which will remove that sense of faintness or sinking at the stomach, which is apt to follow a discontinuance of these liquors. The following will be found an excellent remedy to improve the condition

of the stomachs of those who have been previously addicted to intemperance:—Take an ounce of powdered quassia, add to it one pint and a half of boiling water, cover it, and allow it to remain until cold, agitating it occasionally; then add a fluidrachm of sulphuric acid, and let it stand for twenty-four hours, frequently agitating it.

Take of ginger, swamp milkweed, sassafras, each, half an ounce, add a pint of boiling water, cover and steep for three or four hours, and sweeten with loaf sugar. Strain each of the above infusions, and mix them together; the dose is one or two table-spoonfuls, three or four times a day.

Nutmegs, the fruit of *myristica moschata*, owe their peculiar flavor to a volatile oil. They form an agreeable and harmless addition to gruel, panada, sauces, &c., but are very injurious when administered to females immediately after confinement, to patients recovering from acute disease, or when eaten too freely. In purchasing nutmegs be careful to select those without holes in them, which are heavy, and which have the peculiar flavor of the article; those which have not the above characters, have been deprived of their volatile oil, on which their virtue depends, and are consequently worthless.

Pepper, the dried unripe berries of *piper nigrum* contains an acid oil, volatile oil, &c. Several varieties form the pepper of commerce. It is a stimulating condiment, and when taken in moderation is not injurious, but when used, as it is frequently, in large quantities, to excite the appetite or please the palate, it is very injurious to the digestive organs. The same remarks will apply to *red* or *cayenne* pepper.

Pepper, especially when ground, is liable to many adulterations, several of which are deleterious to health, and are difficult to detect. The better plan for housekeepers to adopt, in order to insure pure ground pepper, is to purchase the pepper-corns and reduce them to powder by grinding, whenever it is wanted. It is not unfrequently the case that cayenne pepper is prepared of the ground pods from which the oil has been obtained, mixed with a portion of good pepper and powdered cantharides, colored with turmeric or yellow ochre, and its weight made as near natural as possible by the addition of a small portion of red lead; such an article is truly dangerous to health and life.

Cloves, the dried unexpanded flowers of *caryophyllus aromaticus*, contain fixed and volatile oil, gum, resin, tannin, two crystalline principles, &c. They are sometimes employed as a condiment, or as an addition to sauces, cakes, pies, &c., but their habitual use, or when used too freely, is injurious, irritating the stomach and bowels, impairing the digestive process, and causing constipation. The habit of eating cloves for the purpose of disguising the breath is extremely pernicious.

Cinnamon, the bark of *cinnamomum zeylanicum*, contains a volatile oil, tannin, cinnamic acid, resin, mucilage, &c. It is a very pleasant and healthful stimulant when eaten in moderation, but is injurious when taken in large quantities, or habitually. It is frequently the case that the ground cinnamon of commerce is composed of inferior bark, or bark from which

the oil has been obtained, mixed with a sufficient quantity of good bark and other articles, to secure the flavor and pungency of the pure bark.

Allspice or *Pimento*, the unripe berries of *myrtus pimenta*, contains fixed and volatile oils, tannin, gum resin, sugar, a peculiar oleaginous substance, malic and gallic acids, &c. It is considerably used as a condiment, and to flavor various culinary dishes, and when used in moderation, produces no unpleasant effects. Like all spices, it is deleterious when taken in immoderate quantities.

Sauces composed of salt, spices, vinegar, &c., as various kinds of *Catsups*, are very frequently used as condiments; they are not safe nor salutary articles, for although they may not be eaten in sufficient quantity to effect any injury themselves, yet the artificial appetite which they are apt to provoke, and thus cause an overloading of the stomach, perhaps, with indigestible substances, is pernicious to health. Invalids should never partake of them.

Pickles, *pickled olives*, and *anchovies*, possess no nutritive properties, and are indigestible, frequently occasioning unpleasant, and even serious symptoms; when eaten at all, it should be in great moderation, and only by those who possess strong powers of digestion, and are accustomed to plenty of daily exercise. As a general rule, a healthy stomach requires no stimulus to produce an appetite, while a weak stomach is certain to be irreparably injured by the use of agents to provoke an appetite.

Preserves or *sweetmeats*, are terms applied to various kinds of fruit, when prepared by boiling, stewing, or otherwise, with sugar or molasses. The fruit from which they are made, should always be tolerably ripe. Eaten in small quantities with bread, or meat, or milk, they are wholesome and nutritious; but they will be found to disagree with weak stomachs, and dyspeptics. Many foreign preserves are so tough, and contain so much fibrous matter as to be indigestible and not fit to eat. Glazed earthen-ware contains oxide of lead, and should never be used to keep preserves or pickles in, for the vegetable acids by dissolving the lead glazing will cause the fruit and its syrups to become poisonous. The same may be said of those airtight, self-sealing cans which are covered with a leaden or pewter cover, or the solder of which comes in contact with the syrup or juice of the preserves. If carbonic acid should be developed in the preserved fruit or its syrup, or, if air should at any time find an entrance within the can or jar, or be originally contained in it, a poisonous solution of lead will be formed. In these matters, too much care cannot be observed.

CHAPTER VI.

Water.—Whey.—Artificial Mineral Water.—Tea.—Coffee.

WATER is as essential to life as air, heat, or light, and it enters into the composition of the majority of those substances which constitute the food of man; it is, indeed, the proper solvent of all solid nutritious substances. Every drop of fluid which is taken into the stomach, is conveyed into the blood, (to supply the loss of the fluids of the body which is constantly taking place during life,) and before it is expelled from the system it traverses every part of the body. When the system requires a resupply of fluid, we are made aware of it by a peculiar sensation termed *thirst*; when solid nutritious food is demanded, the sensation of *hunger* is produced. The immediate seat of thirst is in the fauces, and when present it indicates a deficiency of fluid in the system, and is at once relieved by introducing a sufficient quantity of fluid into the system, whether by the mouth, skin, or rectum; and there is no doubt, that persons may cultivate a habit or abnormal desire of the system, which will cause them to drink more fluid than is really needed,—and when the secreting and excreting organs are active, intemperance in water drinking is much safer than that in any other kind of drink.

When there is a great loss of fluid from the body, as by certain evacuations, diarrhea, perspiration, &c., there is more or less constant thirst, proportioned to the amount of fluid eliminated; thus, in warm seasons, when the atmospherical temperature is considerably increased, a larger quantity of fluid is expelled from the system in the form of perspiration, than in the colder months when the atmosphere is temperate or cold. Consequently, thirst is more urgent and more constant, and more fluid is taken into the system, during the former seasons. Thirst may likewise be excited or augmented by active exercise, or by whatever stimulates the secreting and excreting functions. Salt, spices, stimulating liquors, &c., by exciting the mucous lining of the alimentary tube from the mouth to the stomach, and by rendering the blood more viscid and stimulating, cause an increased desire for drink.

The only fluid which is suitable for an ordinary drink, and which is the best suited for the nourishment of the system, for the dilution of solid food, and for the maintenance of a proper degree of fluidity in the blood is, water. Indeed, water is the only agent that can satisfy thirst, or which the taste of man prefers when not vitiated by artificial appetites. Yet, under certain circumstances, it is frequently found advisable to combine with the drink, farinaceous, mucilaginous, acidulous, or aromatic substances, as in cases of sickness, convalescence, debility, during excessive heat, and in instances where water alone disagrees.

The *quantity* of fluid required at any time, depends much on circumstances. If it be used during a meal, it will be found that animal food will require a larger amount than vegetable; and salted and high-seasoned food

will require still more. Generally, during a warm day, from three to four pints will be demanded by a healthy adult; while in cold weather, from half a pint to a pint will be all-sufficient. Some, however, and especially those who perspire freely, or who use much salt or salted food, will require much more than the above named quantities, while others again will be satisfied with considerably less. It is much better to cultivate a habit of not drinking water or any fluid, until the sense of thirst is very urgent, than to swallow large draughts from every slight call of this sensation. For every unnecessary drop of water added to the circulation, increases the demand upon the vital energy, and causes a rapid waste of the system. As regards the quantity of fluid, and the time for drinking, these must be left to the individual, who will be upon the safer side by not drinking too often, nor too largely at a time. It is supposed by some writers, that the excessive use of fluids, with a small amount of solid food, favors leanness or emaciation; my own observation tends to a contrary belief, for, as a general rule, I have found corpulent persons to be great consumers of fluid substances.

It is extremely improper to flood the stomach with fluid, immediately previous to a meal, as it interferes with the subsequent digestive process; and during a meal, for the same reason, no more fluid should be taken than is necessary to facilitate proper mastication. Usually, the temperature of the drink should be that of the surrounding atmosphere; occasionally warm drinks may be required. The use of cold or iced drinks is considered very improper by most writers; this may probably be the case with some individuals, or where such draughts are too freely indulged in; but, for my own part, I am firmly of the opinion that the temperate use of iced water during the hot summer months, acts as a stimulating tonic to the stomach, prevents febrile attacks, and is greatly conducive to health. Of course, this remark does not apply to those who are so situated that they can procure good, cool, spring or rain-water, which are always preferable, but to those who live in cities which are supplied with the heated and filthy water from rivers. When the system is heated by exercise and the thirst is excessive, much care must be observed in drinking cold water, as fatal results have frequently occurred from a want of prudence; in such case, before drinking, the face and hands should first be bathed freely in cold water, after which the thirst should be allayed gradually, taking only one or two sips at a time. When a person has fallen senseless from imprudently drinking too freely of cold water during a state of excitement of the system, his feet and limbs should be immediately placed in warm water, cold water should be poured upon his head, and as soon as possible some stimulating preparation should be introduced into the stomach, as spirits of camphor, tincture of cayenne, &c.

The purer the water, the better is it for health and all those purposes for which fluid is required. Rain-water and spring-water approach nearer to purity than any other; river-water stands next, when it contains no substance prejudicial to health or life. Hard water contains certain mineral matters in solution, which lessen its solvent powers, and occasion abnormal conditions of the blood, from which arise many chronic diseases, as of the

liver, spleen, kidneys, skin, &c. Soft water, or freestone water, should always be used instead of hard water, or limestone water. Soft water may be known by forming a suds with soap, while hard water coagulates soap, and is unfit for internal or domestic uses. An excellent test for determining the quality of water is the tincture of soap; in distilled water, no action is observable; in soft water, a faint, semi-transparency occurs; and in hard water, a milky whiteness is produced by the soap-tincture.

Rain and snow-water may, by proper precautions, be obtained tolerably pure, from the roofs of houses on which they fall, by allowing the impurities to be washed away in the commencement of a heavy rain, or with the first water occasioned by a thaw. Nitrogenous organic matter is usually found in rain-water collected in large cities. Both rain and snow-water may be applied to every domestic purpose, as well as to most chemical and pharmaceutical operations. But no water should ever be used which comes in contact with lead—for the lead becomes oxydized by the oxygen of the water, which oxide is reduced to a carbonate by the action of the carbonic acid derived from the air, and the water thus containing lead, may produce the poisonous effects of that metal upon the system; and the more soft and pure the water, the greater the risk.

Spring-water is that which springs from the earth, free from large amounts of carbonic acid, or salts, and not possessing elevated temperatures; it is the general beverage of mankind, and is applicable to all domestic purposes. Those springs arising from trap-rocks, sandstone, transition rocks, and primitive rocks, are the purest; those from alluvial strata, limestone, and coal formations, are the least pure. Well-water very much resembles spring-water in its qualities, its purity being proportioned to its depth and amount of use.

River-water, especially when passing through alluvial countries, and near great cities, contains suspended in it, more or less earthy and vegeto-animal impurities, which impair its transparency. When moderately pure, it is fit for all ordinary purposes, though if it contain much vegeto-animal matter, it is apt to occasion dysentery and other affections of the bowels. The Croton water of New-York, the Schuylkill water of Philadelphia, and the Ohio and Mississippi river-water, are when filtered, sufficiently pure for ordinary purposes; and they ought never to be used unless they are filtered. The lake waters of the United States are generally wholesome, being similar to river-water.

Marsh or stagnant water always contains vegeto-animal matters in a state of decomposition, giving rise to peculiar acids, or poisonous gases, hence they are very unwholesome, occasioning ague, dysentery, &c., and should never be used for domestic or medicinal purposes. "Alkalies and boiling render such water less unwholesome; and it is said that astringent bitters, such as the bark of the willow and the Peruvian bark, not only cure ague, but purify the water that causes it. The presence of trees diminishes *malaria* and prevents the water near their roots from becoming putrid; and cleared countries, if not well drained, are far more subject to intermittent diseases

than those that are full of forest. Here I would incidentally observe, that bitters are more relished and more useful in marshy districts than in those more salubrious. The poor on the coast of Sussex use a strong infusion of that excellent bitter, the lesser centaury, with excellent success, in brow-ague, and the intermittent headache, so common among them. The putrid matter held in solution by stagnant water acts, perhaps, as a specific ferment, which propagates itself under favorable circumstances; and from analogy, it is not unlikely that certain vegetable principles, such as the bitter alkaloids, quinia, &c., may arrest this fermentation both in the body and out of it, just as the fermentation of yeast in beer is arrested at a certain point by the hop and other bitters, or by the addition of a sulphate." *G. Moore.* This view certainly favors the cryptogamic theory of intermittent diseases, for the fermentation of yeast being occasioned by microscopic vegetation, may not a similar fermenting or vegetable growth in the system occasion those diseases termed epidemic or malarial? This view which originated with Dr. Mitchell, of Philadelphia, certainly is deserving of more attention from the medical profession than has been bestowed upon it.

All waters are improved by boiling, but they should be poured from one vessel to another, previous to internal use, in order to regain from the air, the oxygen which they have lost. Animal charcoal purifies water that passes slowly through it, but it requires to be renewed every two or three days, or it loses its purifying qualities. Alum, or albumen, added to water will clarify it when muddy, but it is not always convenient nor proper to employ them. The best mode of purifying water is to pass it through a filter composed of sand, gravel, and porous earth and stone; the water should then be kept covered, especially during the summer, in order that it may not become filled with microscopic fungoids and animalcules, which, although harmless when alive, may cause sickness by their death and decomposition.

Hard water may be rendered fit for washing by the addition of substances to it, which precipitate the salts it holds in solution. Thus, water which contains the bicarbonate or sulphate of lime, may be softened by the addition of carbonate of soda; vegetable impurities may be precipitated by adding ten grains of pure fresh lime to every two quarts of water, stirring it well, and filtering, or allowing it to stand till clear. Oxalate of potassa, decomposes salts on which the hardness of the water usually depends, and renders it sufficiently soft for washing.

Mineral waters contain a large proportion of carbonic acid, with or without saline, alkaline, metallic, earthy, and other foreign substances, and are used on account of the therapeutical influences they exert upon the animal economy.

Various substances are added to water to form nutritious, tonic, palatable, or stimulating draughts, and to a brief notice of some of which, I will call the attention of the reader.

Toast-water is water to which toasted bread has been added, communi-

eating its taste and soluble portions, without affecting the diluent properties of the water. It forms an agreeable and healthy drink, and is used by persons with whose stomachs water alone disagrees. As it possesses slightly nutritive qualities, it is used in febrile affections, and other cases where diluents are required.

Sir A. Carlisle recommends toast-water to be made by pouring boiling water upon a hard biscuit which has been reduced by fire to a coffee color. As soon as it has cooled it should be drank, on account of its tendency to acquire an unpleasant flavor in two or three hours.

Whey. When milk is allowed to stand a sufficient length of time, it separates into two parts, the *curd*, or white solid or coagulated part, and the *whey*, or thin, greenish-yellow or watery part, which has a saccharine, milk-like flavor; the same effect may be produced by curdling milk, by the addition of rennet. Whey is an agreeable, nutritious and refreshing drink, which is readily digested, augments the secretions and effects a healthful change in the fluids of the body. Laborers will find it a much safer and better article to allay thirst in hot weather, than stimulating or intoxicating drinks. (*See Milk, Cream, and Buttermilk*, pages 44 to 48.)

Artificial Mineral Water, which consists of water surcharged with carbonic acid gas, and flavored with some kind of syrup, is a very grateful and healthful drink during the warm seasons, if not taken in too great an abundance. Too much care, however, cannot be taken, to avoid metallic impurities, especially of lead; when it is on draught from fountains furnished with leaden tubes, the first water drawn every day, should be thrown away, as its use might give rise to unpleasant symptoms. This artificial water allays thirst, diminishes preternatural heat, favors perspiration, lessens nausea and uneasiness of the stomach, and promotes the urinary discharge. When on draught from fountains, it is called "soda water;" when put up in bottles, and flavored with various syrups, it is termed "mineral water."

Vessels containing carbonic acid water should be kept in a cold place, perfectly tight, and free from lead, or any other poisonous metal. Mineral water should not be drank immediately before, or directly after a meal, as it may interfere with the appetite or digestive process, by the gas contained in it unduly distending the stomach.

Tea, an infusion prepared from the dried leaves of various species of the tea-plant, which grows in China and Japan. There are two kinds of tea used in this country, *green tea* and *black tea*, each of which is divided into several qualities. Green tea contains gallic acid, tannic acid, gum, gluten, lignin, bitter extractive, and volatile matter. Black tea contains tannic acid, gum, gluten, lignin, and volatile matter. A crystalline, salifiable base has been found in tea, to which the name of *theine* has been given; it exists in tea in combination with tannic acid, and is identical with the caffeine obtained from coffee; both of these principles are supposed to favor the formation of a substance contained in bile, termed taurine. The infusions made from both kinds of tea, have a peculiar, refreshing, somewhat astringent, and agreeably bitterish taste; that of the green tea, being more pleasant than that of the black.

Tea possesses gently exciting, and astringent properties, exerting also an influence upon the brain and nervous system. Its peculiar flavor depends upon a lemon-yellow colored volatile oil, lighter than water, which acts alone as a narcotic, but when combined with tannic acid, as a diuretic and diaphoretic. Used in moderation, the infusion of tea is a grateful and harmless beverage, but if used for a long time in large quantity, or of great strength, it induces many unpleasant, nervous, and dyspeptic symptoms, as wakefulness, tremors, palpitations, anxiety, and other distressing feelings. For a daily drink, black tea is preferable to green, as it contains less stimulating and narcotic principles; and it should never be used except at the evening meal, unless in cases of sickness, debility, &c. Green tea is best adapted in cases of sickness, in fevers and inflammatory diseases, colds, catarrhs, and after a fit of intemperance; it rarely disagrees with the invalid, and almost always proves refreshing and agreeable, acting, if drank warm, as a diluent, diaphoretic, and diuretic.

A great deal has been said by ultra dietetical reformers, relative to the poisonous or injurious properties of tea—especially the green varieties. That it is injurious when used in excessive quantity, or in strong infusion, there can be no doubt, for it is well known that small doses of the extract, or of a strong infusion, will speedily destroy the lives of inferior animals. Still, it must be admitted that when used with moderation, by persons of active, laborious habits, its effects are rather beneficial than otherwise, and I see no reason why a war should be kept up against the article itself, instead of its intemperate employment. Tea, whether green or black, should never be used daily by persons in health; it should only be drank in moderation at an evening meal, when the system is depressed or languid from exercise or labor of the day. When the debility experienced at this time is owing to the heat of the season only, there is no better fluid to overcome it than pure cold water, other drinks, however, are admissible, and may be used at the supper table instead of tea, as buttermilk, toast-water, sage-tea, milk, milk and water, or even lemonade. And persons should accustom themselves to varying their breakfast and supper beverages, and not use the same liquid daily, remembering that there is no fluid so thoroughly adapted to the wants of the system as pure cold water, and that the more this is interfered with by the addition of foreign agents, the less healthful and beneficial is it rendered. Many persons who use tea and coffee daily, are subject to vertigo, headache, incapability of mental reflection, or oppression at the stomach; unpleasant symptoms which invariably disappear when water is substituted for these stimulating drinks. Children should never be allowed to drink tea except when required as a medicinal refreshing draught. Persons of sedentary or inactive occupations require much less tea as a stimulant than those of active habits; indeed, they will derive more advantage from water, milk, or milk and water.

Tea is frequently adulterated with other articles, as elder leaves, ash leaves, &c., and it is not uncommon for some unprincipled persons to buy up the tea leaves which have been used to form the infusion of tea, and mix them

in various proportions with good tea leaves, and which adulteration it is almost impossible to detect. When other leaves are added, it may be discovered by macerating some of the leaves in water for a short time, then spread them out between pieces

Fig. 6.



Genuine Tea leaves.

Fig. 7.



Spurious Tea leaves.

of paper, and press them till dry. If the leaves are narrow and slender, with deeply serrated edges, and their ends acutely pointed, as in fig. 6, they are genuine; but, if they are rounded, more obtusely pointed, the edges not so deeply serrated, as in fig. 7, or vary in other respects, they are spurious.

Factitious black teas are generally colored by logwood; the green, by being laid on sheets of copper, and having Dutch pink and verdigris added to them. This last is a highly poisonous addition, and has produced dangerous symptoms among those who have partaken of such made-teas, as nausea, vomiting, great pain in the stomach, faintness, great depression, and cold perspiration. A very excellent work on the subject of adulterations of food and drugs, as detected by the microscope, has been published in London by A. H. Hassall; it can be obtained in this country for about four dollars and a half. It should be read by every person.

Spurious black tea, when slightly moistened and rubbed on a sheet of white paper, produces at once a bluish-black stain; or, if thrown into soft cold water, it does not produce the amber color of the genuine leaves, but a bluish-black, which, unlike the pure article, becomes reddened on the addition of a drop or two of oil of vitriol, (*sulphuric acid*.)

Copper may be detected by placing a small quantity of the tea in a vial, adding some aqua ammonia (spirits of hartshorn,) and a little water, and then shaking them together; if copper be present, the fluid will acquire a sapphire-blue tinge. When carbonate of copper is used to color green tea, it may be known by throwing some of the leaves into water that has had sulphureted hydrogen passed through it, which will turn the fluid of a black color.

Coffee, the seed of *coffea arabica*, a native of Arabia Felix, and Ethiopia, and extensively cultivated in Asia and America. There are several varieties of coffee, among which the Mocha, Java, and Havana, are considered the best. Raw coffee contains cellulose, fatty matter, legumin, chlorogenate of potassa and caffeine, free caffeine, volatile oil, &c. When roasted, a great change occurs in coffee, it acquires a bitterness and a peculiar, quite agreeable

odor, which did not exist in it before; at the same time the seeds expand and lose nearly twenty per cent. in weight. If the torrefaction be conducted in a covered vessel, keeping the coffee seeds constantly agitated under exposure to the heat of a moderate fire, and this action be kept up for a proper length of time, the roasted coffee imparts to boiling water a very agreeable taste and odor. If the heat be too long applied, the infusion becomes unpleasantly bitter; and if it be insufficient, the peculiar aroma and flavor of good coffee will not be obtained. The sooner coffee is used after its roasting and grinding, the more agreeable and stimulating will it prove, as it rapidly loses its most desirable properties by being kept.

The infusion of torrefied coffee grains forms a well-known favorite beverage. Taken in moderation it is a gentle stimulus to the digestive apparatus, and to the circulation, generally occasioning a degree of wakefulness; in large quantities it produces derangement of the nervous system, as well as of the organs of digestion, and if its use be thus persisted in, it will occasion headache, dyspepsia, &c. A strong cup of coffee will cause a degree of wakefulness for several hours; and strong coffee, freely administered, has been found an excellent antidote to the baneful effects of opium or alcohol in many instances.

Coffee is occasionally useful in the sick room; it relieves some forms of headache, and has proved beneficial in some cases of asthma and whooping cough; it is likewise a valuable cordial and restorative after exhaustion, great fatigue, as well as in cases of sudden withdrawal from spirituous beverages.

Coffee should never be taken in large quantities, nor in very strong infusion, because it seldom fails to derange the stomach and injure the digestive function, and it is, likewise, very apt to occasion wakefulness, tremors, headache, loss of memory, and many other unpleasant symptoms; indeed, there are many individuals who cannot use it at all, on account of its disagreeable effects. The stimulating effects of coffee, like those of intoxicating liquors, are always followed by a depression proportioned to the quantity and strength of the infusion employed and the degree of excitement occasioned by it. Although usually considered to be a constipating agent, yet I know many persons on whom it produces a purgative, or mild laxative effect,—in some, so much so that they cannot make use of it at all during the warm summer and fall months, on account of the continual tendency to diarrhea caused thereby. During the cholera years I relieved the fears of many persons who found themselves subject to a constant looseness of the bowels, by persuading them to dispense with the use of coffee altogether. Persons of sedentary habits, dyspeptics, and children should never use coffee, save, occasionally, as a medicine; and those of more active habits and powerful digestion should use it with moderation—a weak infusion with a goodly proportion of cream or milk, and sugar, may be taken by them daily in the quantity of an ordinary cupful at breakfast or at dinner. To exceed this, or use a strong infusion, is as much a habit of intemperance as the daily use of strong drink, and though it may not so immediately develop the abnormal symptoms resulting from intemperance in alcoholic drinks, yet it is certain to

ultimately occasion them if its improper use be persisted in. I have frequently traced many nervous diseases, and unaccountable symptoms of an alarming character, among children, to the excessive use of coffee, in which they had been indulged by imprudent and unwise parents. Coffee should not be drank at night on account of the wakefulness it occasions, unless, indeed, this state be desired.

Many persons make use of very strong coffee for the purpose of rendering the brain more active, and thereby enriching the mind with ideas, as writers, speakers, &c. And it is, unfortunately, the case that many females, previous to an attendance upon soirees, parties, balls, &c., are in the habit of drinking strong coffee for the purpose of procuring an artificial flow of spirits, mirth, wit, hilarity, &c. Although this does not produce the beastly condition resulting from the use of alcoholic liquors, nevertheless, it is as censurable a feature of intemperance. A French writer states, that although coffee excites the mind temporarily to unwonted activity, yet "unfortunately it is not without great prejudice to mind and body that man procures such overexcitements. After them come prostration, sadness, and exhaustion of the moral and physical forces; the mind becomes enervated, the body languishes. To a rich imagination succeeds a penury of ideas; and if the consumer does not stop, genius will soon give place to stupidity."

In relation to the views of some dietetical reformers who proscribe all kinds of stimulants as a drink, and, indeed, all liquids except water and milk, a recent writer remarks:—"We should, however, consider that cordials or stimulants are, at least, occasionally useful, and that, whether useful or not, mankind always have, and probably always will make use of them. But of all those which have hitherto been introduced, none, perhaps, combine so many excellencies, with so few evils, as that of coffee. To moderately nutritive properties, it adds those of a mild and cordial stimulant, without producing those peculiar narcotic effects which so often accompany the use of strong green tea. We are persuaded that it is not wise to wholly proscribe coffee, as it is eminently useful to those who are trying to wean themselves from the use of alcoholic stimulants, and if employed of moderate strength, with milk and sugar, it cannot be considered injurious as a common beverage."

The adulterations in coffee are principally met with in that which is roasted and ground for sale, and to which are frequently added, by unprincipled venders, peas, beans, rye, sawdust, old coffee grounds, &c. These adulterations are not very easily detected, save in the flavor of the infusion, and the best plan to adopt, in order to avoid being imposed upon in this matter, is for every family to buy green coffee, and roast and grind it for themselves.

Chocolate is prepared by roasting the seeds of *Theobroma cacao*, and divesting them of their husks, reducing them to powder, forming them into into a pasty substance with sugar or other saccharine matter, and some aromatic added to improve the flavor, and then placing it in molds to dry. Not unfrequently, powdered sago or potato starch is added, in order to give a thickening quality to the chocolate. Whether boiled in water or in

milk, chocolate forms a rich, nourishing diet, but is of difficult digestion, owing to the large quantity of oil contained in it, and is, consequently, unfit for dyspeptics and persons of sedentary occupations. Even among the robust and laboring classes, it will often produce a sense of oppression at the stomach, with mental and physical dulness.

Chocolate is subject to adulterations with rice flour, wheat flour, potato flour, the flour of beans and peas, suet or other fat, &c., which can only be detected by a tedious process. If chocolate has a rancid smell, it is probably adulterated with gum, fat, &c.; if an infusion of it is changed to a blue color by the addition of tincture of iodine, it contains starchy substances—if to a yellowish, it is free from starch. Lead, which is sometimes added in the form of the red oxide, to impart a fine red color, may be detected by the process given for detecting it in cheese, on page 47. Sulphuret of mercury has been added for a similar purpose, and may be suspected when a sediment of a brick-red color is seen to take place in a decoction, after it has stood for a short time; good chocolate has a deposit of a dull brown color, which requires some time in forming.

Cocoa, is another preparation made by roasting the above-named seeds and grinding them, without depriving them of their husks, and sometimes adding sago or potato starch. Not unfrequently, the husks, which are separated from the seed in the preparation of chocolate, are also mixed with the above. *Cocoa* is less oily than chocolate, and boiled in water and milk, with sugar added, forms a pleasant and moderately nutritious drink, which agrees very well with many persons. A weak infusion is frequently allowed as a nourishing drink to convalescents; but great discretion is required, as it is not always a proper article of diet for them. Containing astringent properties, *cocoa* is not so applicable to those of constipated habits as to those with relaxed bowels.

Cider is the fermented juice of apples, and is a refreshing and agreeable drink when not used too freely; its daily use, however, is by no means advisable, except during febrile diseases. New cider, or that which is imperfectly fermented, is apt to produce flatulence, colic, and acidity of the stomach; and with many persons it induces diarrhea. When thoroughly fermented, cider contains from five to ten per cent. of alcohol, and will cause intoxication when drunk in too large quantities at a time; its constant, daily use will give rise to various forms of chronic disease. Drank occasionally at dinner-time, with animal food, and especially in warm weather, it assists digestion by imparting a gentle stimulus to the digestive organs, while at the same time the malic acid contained in it, assists in the softening and chymification of the food eaten. Good cider not only forms a grateful beverage for patients with fever, but actually exerts a salutary medicinal influence, especially when the tongue is furred black or brown; patients thus situated, are very apt to crave cider, or other acidulous draughts, and which should never be withheld from them. It may likewise be used with advantage in some forms of dysentery, but is generally injurious in diarrhea.

On account of the great amount of factitious wines, brandies, &c., now a-days, manufactured by unprincipled men, and in which impositions cider forms an important article, it is very difficult to obtain this agent in many of our towns and cities; and that which can be procured is very apt to be either an unhealthy article formed of vinegar, honey, and water, with perhaps sulphuric acid, which mixture has undergone a degree of fermentation; or, alcoholic liquids have been added to the pure cider to render it strong and more intoxicating, and sugar of lead to prevent its spoiling and correct its taste. It is very difficult to detect many of these frauds; when brandy, whiskey, &c., have been added, they may sometimes be known by their peculiar odor, or the flavor they impart. Lead may be determined by adding together equal parts of cider and water in a glass tumbler, slightly acidulating the mixture with muriatic acid, and then passing sulphureted hydrogen gas through it; if it becomes of a dark-brown or black color, lead is present. Cider, which has turned sour, is frequently corrected by the addition of chalk or lime. These may be detected by adding a small quantity of a solution of oxalate of ammonia, which, if they are present, occasions a copious, white precipitate. All of the agents named as tests in this work, even to the sulphureted hydrogen gas, can be obtained at the establishment of any good druggist; and every family in cities should keep them constantly in their respective houses, in order to detect frauds and adulterations, which unfortunately for mankind are now so common.

Spruce Beer, Ginger Beer, and other drinks, made by sweetening some vegetable infusions with molasses, and causing them to ferment by the addition of yeast, are quite common summer beverages in our large towns and cities. These are seldom intoxicating in their nature, but they do mischief, especially among dyspeptics and those of weak stomachs, by the carbonic acid gas in them swelling the stomach and retarding digestion; while at the same time, from acidity of the stomach produced by their saccharine substances, irritation, pain, and diarrhea will be apt to follow. However, the use of these drinks is preferable to that of intoxicating draughts; and for those whose stomachs are active and strong, and who desire some other drink during the summer, than water, the following will be found a cooling, pleasant, and in most cases, healthful beverage: Take of Hops, one ounce; Wild Cherry bark, one ounce; Sassafras bark, two ounces; Guaiacum shavings, one ounce; Ginger, half an ounce. Make two gallons of strong decoction, strain, sweeten with molasses, and when cool add a table-spoonful or two of good yeast. As soon as fermentation commences, it is fit for use; it may be bottled, and should be used moderately, say two or three ordinary tumblerfuls per day. The man of wisdom seldom drinks such preparations, or when he does, it is with great prudence and moderation; hence, he escapes many of the diseases of warm weather, to which they, who have no control over their animal tastes and passions, and who indiscriminately use everything that gratifies for the moment, are very subject.

Malt Liquors, as beer, porter, ale, &c., contain a large proportion of alcohol,

with carbonic acid, sugar, water, salts, &c. When properly prepared, they form refreshing, stimulating and nourishing drinks, if used with moderation, and are frequently very beneficial in many forms of disease, as in convalescence from exhausting diseases, consumption, debilitating chronic diseases, in the stage of prostration of febrile affections, &c.; while, on the other hand, they should be avoided by those who are dyspeptic, bilious, plethoric, or disposed to apoplexy, an attack of which last named affection they are very apt to induce. But as with all other articles which are largely consumed, these liquors are almost always adulterated with poisonous substances, for the purpose of improving their flavor, color, body, and the intoxicating effects arising from their use. Among the articles which may be named as adulterations, are cocculus indicus, hyoscyamus, belladonna, lauro-cerasus, opium, tobacco, nux-vomica, sulphate of iron or green vitriol, &c. While, instead of using hops,—aloes, gentian, quassia, hoarhound, wormwood, Peruvian bark, &c., are substituted, for the purpose of communicating a bitter taste. Salt is frequently added to beer, lager beer, &c., in order to increase the thirst of the consumers. The greater part of these adulterations can only be detected by tedious chemical processes. So that were these drinks entirely discarded from among us, the community would be greatly benefited thereby; for the small amount of good which an unadulterated article would produce, is vastly more than counterbalanced by the immense amount of disease and death annually caused by the use of adulterated manufactures.

There can be no doubt that malt liquors, in moderation, form stimulating, refreshing and nutritious beverages, but their excessive use is fraught with serious consequences, and more especially when they contain some of the poisonous substances just referred to. Thus, they distend the stomach, impair the digestive process, derange the regularity of the bowels and urinary organs, and produce the worst kind of intoxication; and when adulterated, they cause serious and irreparable injury to the brain and nervous system. Although the effects of malt liquors take place less rapidly than those of alcoholic, yet when they do ensue, they are more permanent, and less easily removed, and, instead of the enlivening influence usually caused by the latter, they exert a stupefying influence on the brain, causing the most lively person to become dull and stupid.

Beer, ale, and porter drinkers, usually become very corpulent, or bloated and stupid, and present no very pleasing aspect to the beholder. Their circulation is very much interfered with, the pulse being full, laboring, and cord-like; when they sleep they snore loudly and constantly, and a bleeding from the nose, which not unfrequently happens, decidedly relieves them from a sense of fulness in the blood-vessels, especially those of the brain. They are very subject to diseased liver, diseased kidneys, dropsy, and apoplexy; and more than two-thirds of those who indulge to excess in the use of malt liquors, die suddenly of apoplexy, or are suddenly stricken with palsy. All beer drinkers are very subject to inflammatory attacks, which are always more obstinate and unyielding in their character, than among those not addicted to the use of such drinks.

CHAPTER VII.

Wine.—Ardent Spirits.—Intemperance.

Wine is the fermented juice of the grape; although the term is also given to the fermented juice of the acidulous fruits. Grape juice contains elements which will render it vinous without extraneous aid; while the juice of sub-acid fruits, usually require some additional substance, as sugar, &c., before they can be made into wine. The juice of unripe grapes is called *verjuice*, and contains malic, citric, tartaric, and racemic acids, with bitartrate of potassa, sulphates of potassa and lime, a little tannin, &c. The unfermented juice of the ripe fruit is called *must*, and contains sugar, gum, malic acid, bitartrate of potassa, various inorganic salts, &c. It differs from the juice of other fruits in containing less malic acid, and a large proportion of tartar, and which is one reason why it is less apt to become sour than the home-made wines. Climate, soil, and many other circumstances, have much influence upon the quality of the wine; and during its preparation, not only does it require different treatment, according to the character of the wine, but it also requires great care, attention, and practical skill, to manage the fermentation properly.

Alcohol enters into the composition of all wines, and is the substance upon which their stimulating and intoxicating properties depend; their influence in these respects being proportioned to the quantity of alcohol present. It seems, however, that this fluid which is naturally formed in the wines, exerts a less pernicious and inebriating influence, than when the same amount of it is taken separately, either pure or diluted with water; and this is supposed to be due to the presence of certain other constituents of the wine, which have a qualifying influence upon the alcohol. Some persons, however, believe that the alcohol obtained from wine is the result of changes effected by distillation, and that it does not naturally exist in this liquor; or, that it is the result of a chemical action, which we find to be the case in obtaining prussic acid from peach-kernels, &c.

According to Mr. Brande, the per-centage of alcohol in wines, &c., is as follows:—

Alcohol,—per cent.			Alcohol,—per cent.		
Port wine, from	19.00	to 25.83	Gooseberry, average,		11.84
Madeira, “	16.40	to 26.00	Orange, “		11.26
Claret wine, “	12.91	to 17.11	Elder, “		8.79
Sherry, “	18.25	to 19.81	Cider, from	5.21	to 9.87
Teneriffe,		19.71	Perry,		7.26
Champagne, average,		12.61	Mead,		7.32
Hock, “		12.08	Burton ale,		8.88
Burgundy, “		14.57	Edinburgh ale,		6.20
Malaga, “		17.26	Brown stout,		6.80
Lisbon, “		18.94	London porter,		4.20
Currant, “		20.55	Small beer,		1.28

From this table it will be seen that most of the common wines in use contain from a fourth to a fifth of their volume of alcohol—a sufficient quantity to intoxicate and produce deleterious effects upon the system, when intemperately or habitually used, and which effects must necessarily be augmented by the additional presence of brandy, which is mixed with nearly all foreign wines, in order to preserve them, when imported into this country. New wines are always more intoxicating than old, and which is due to the fact, that the alcoholic strength of wines diminishes with their age.

The peculiar flavor of different wines depends upon some unknown volatile principle, and not unfrequently, it is produced by the addition of foreign substances.

Wines are designated according to their color, *red* or *white*; also according to their other properties, taste, &c., as *sweet*, *acidulous*, *light*, *strong* or *generous*, *dry*, *rough*, *sparkling*, *still*, &c. The wines of different countries are distinguished in commerce by various names, thus:—*Port wine* is made from round, black grapes, and is exported from Oporto. It contains considerable foreign alcohol, added in the shape of brandy for the purpose of preserving it, and is very strong and astringent. It is more apt to constipate the bowels and disorder the head and stomach than sherry, and is frequently resorted to as a tonic in debilitated systems, and as an astringent in cases of looseness of the bowels. Very little Port wine is received in this country, because, the amount annually exported from Oporto, is barely sufficient for the supply of England and her dependencies. In fact, it is a very difficult matter to procure pure Port wine; the greater part of that which is sold in this country, being a factitious article, prepared from cider, brandy, logwood, raisin-seeds, spoiled wine, &c.; so that it were better as a general rule to dispense with the article entirely, either as a medicine or as a beverage.

Sherry wine is made at Xeres, in Andalusia, and is exported from Cadiz. It is of an amber color, varying in the depth of its tint, and has a pleasant flavor without much acidity. It is peculiarly valuable on account of the small quantity of free acid which it contains, which renders it useful among patients troubled with gout, acid stomach, or uric acid deposits. Much of the sherry wine in this country, is prepared from inferior wines, or is adulterated with various foreign ingredients.

Madeira wine is exported from the island of Madeira, and is the strongest white wine in use, being stronger and more acid than sherry. It is not fit for a common drink, but is well adapted for old persons, invalids, and debilitated constitutions, when its slight acidity does not disagree. Like all foreign wines, it is frequently adulterated, and some care must be taken, as with all wines, in order to obtain a pure article.

Champagne wine is usually prepared from a black grape; its sparkling and effervescing appearance is owing to the large amount of carbonic acid gas which it contains. It is an exhilarating wine, producing speedy intoxication with subsequent acidity of stomach and headache, and is, therefore not fit for a common drink. It is occasionally useful in cases of lowness of spirits, and to allay nausea and vomiting. The small province of Cham-

pagne does not manufacture sufficient of this wine to supply the extensive demand for it, consequently more than two-thirds of the Champagne wine met with in this country is a factitious article. An excellent imitation is made in this country as follows, and which will tend to explain the cause of the scarcity and high price of crab-apple cider:—Take of good crab-apple cider twenty-eight gallons, fourth-proof brandy one gallon, genuine Champagne five gallons, milk one pint, bitartrate of potassa half a pound. These are mixed together, allowed to stand for a time, and bottled while fermenting.

Claret wine is a French red wine, and ranks as a light wine; it has a deep purple color, and an astringent, acidulous taste. The best are the brands *Lafitte*, *Latour*, *Chateau*, *Marguax*, and *Haut-Brion*. These wines are light and wholesome, and are less heating and more laxative than other wines; used in excess they cause acidity of the stomach. Claret is an unfit wine for persons disposed to gout, rheumatism, diarrhea, dyspepsia, or to depositions of uric acid in the urine. Much of the claret wines of ordinary dealers is a most pernicious compound, being made of claret with spoiled Port wine; of cider with coloring and astringent materials, and a little neutral spirits, together with various other unhealthy ingredients.

The native *Catawba grape*, introduced by Major Adlum of Washington city, forms an excellent wine, which will undoubtedly supersede the use of all foreign wines, at least for medical purposes. Mr. N. Longworth, of Cincinnati, has for a long time been engaged in the cultivation of this and other kinds of grape, as well as in the manufacture of *native wines*, and by dint of perseverance and careful investigation, he has succeeded in preparing wines which are fully equal to those of foreign origin. Longworth's *Catawba* and *Sparkling Catawba*, are becoming known throughout the country as superior articles, and their purity and freedom from adulterations render them preferable in all instances where these agents are indicated or required. It is much to be regretted that the price of our native wines is as high as we find it, being in some cases nearly, if not quite, equal, to that of imported wines. My own impression is, that, the cultivation of the grape and the free use of our native wines will do more to remove the vice of drunkenness from among us than any other means which have yet been tried.

The acidity of stomach which follows the drinking of wine, is not altogether due to the small amount of uncombined acid contained in it, but to other causes, as debility or derangement of the digestive organs, the overstimulation produced by the alcohol present, &c.

The constituents of wine are, *alcohol*, which in a considerable quantity forms a strong wine; an *odorous principle*; *blue coloring of the husk*, in red wine; *tannin*, in rough or astringent wines; *bitter extractive*; *grape sugar*, especially in sweet wines; *gum*; *yeast*; *acetic acid*; *malic and tartaric acids*; *bitartrate of potash*; *carbonic acid* in the sparkling wines; *bitartrate of lime*; *water*; &c., &c. These constituents vary in their proportions in the different wines, and some of them are frequently absent in one kind of wine, but present in another.

An excellent, pure, and sparkling wine may be made as follows: Take twelve pounds of good raisins, cut each raisin in two, and put them into a five gallon demijohn, nearly filled with clean soft water; let it stand uncorked for twelve or fourteen days then filter, bottle, and cork well. Upon the residue, after the wine is poured off, put as much water as before, let it stand a sufficient time, and the result will be a good wine vinegar.

Wine, when used in moderation, slightly excites the vital powers, aids the digestive process, and enlivens the spirits. Persons in health, seldom require the use of wine, or indeed any other stimulating drink; it is only when the system is debilitated or depressed, the digestive functions impaired, &c., that any excitement of this character will be indicated, and, then, probably, pure wine is preferable to any other fluid in which alcohol enters as a constituent. Wine is frequently employed with advantage in convalescence from fevers, in sinking of the vital powers, and alone or conjoined with Peruvian bark in extensive ulceration and gangrene; it has also proved useful in some convulsive diseases. It must never be forgotten, that whatever degree of exhilaration may be produced in a healthy person by the use of wine, it will certainly be succeeded by a degree of nervous depression proportioned to the amount of previous excitement. Hence the immoderate use of wine, or its habitual indulgence debilitates the brain and nervous system, paralyzes the intellectual powers, impairs the functions of the stomach, producing a perverted appetite or morbid craving for the renewal of the intemperance, beside engendering diseased liver, gout, rheumatism, dropsy, apoplexy, gravel, and other painful and serious affections. The wine-drinker is most commonly a sufferer from some disease occasioned by the use of his favorite liquor, for when taken habitually it invariably leaves its mark, not only by the presence of disease, but by the wine-red cheeks which are commonly present, and the claret-colored carbuncles which grace his nose. It renders him impatient, peevish, and irritable, frequently leading him into difficulties and quarrels, without any real cause, if we except that of wine itself.

In this country, wine is adulterated to a very great extent; the most dangerous article used for this purpose is lead, which is added for the purpose of rendering wine clear and preventing its becoming acid. It is a murderous practice, and those who are guilty of it, should be dealt with by law as common murderers. The presence of lead in wine may be known by the dark brown or black color produced when a stream of sulphureted hydrogen gas is passed through any portion of it.

Lime or carbonate of lime is frequently added to sour wines to remove their acidity; the presence of lime may be ascertained by the large amount of precipitate occasioned by the addition of a solution of oxalate of ammonia. Carbonate of lime may be detected by evaporating two fluidounces of the wine to two fluidrachms, then adding to the remaining wine four fluidrachms of alcohol; tartrate and sulphate of lime are precipitated, and the acetate of lime is dissolved. Then strain the solution, and evaporate carefully to dryness. This dissolved in water, will yield a very abundant

precipitate with a solution of oxalate of ammonia, giving off at the same time, the smell of vinegar, when decomposed by oil of vitriol or sulphuric acid.

If alum be added to wine it may be detected by adding an ounce of distilled water to an ounce of the wine, and gradually letting fall into the mixture a solution of the muriate of barytes. If a copious white precipitate takes place, add a small quantity of pure nitric acid, and if alum be present, the precipitate will not be redissolved.

There are many other articles added to wines as logwood, carbonate of soda, brandy, elderberries, &c., &c., many of which are difficult to detect; beside which, the counterfeit or spurious wines, frequently contain articles in their composition which are decidedly injurious in their effects upon the stomach, and when such wines are relied upon as medicinal agents in disease, they always produce mischief and disappointment.

Alcohol is a fluid or pure spirit obtained by submitting the juices or infusions of certain fruits, &c., to the vinous fermentation, and then distilling and subsequently rectifying them. It is the stimulating and intoxicating principle of all malt, vinous, and spirituous liquors. When deprived of its water, it is termed *absolute alcohol*; the alcohol of commerce is termed *rectified spirit*, and is imperfectly freed from water, and other foreign substances. *Proof spirit* is diluted alcohol, having the specific gravity 0.955. The presence of water in alcohol may be known by dropping into the liquid a piece of anhydrous baryta, which will fall to powder only when water is present.

Alcohol is inflammable, and burns without smoke or residue; it combines with water and ether in all proportions. It dissolves volatile oils, fixed oils, resins, sulphur, most varieties of sugar, phosphorus, the vegetable alkaloids, caseine, iodine, tannic acid, ammonia, balsams, camphor, and a great number of other substances, on which account it is extensively used in medicine and in the arts. The danger of manufacturing drunkards by the administration of alcoholic drinks, as wine or brandy, &c., in the form of bitters, cordials, &c., which was so common a few years since in the profession, we are glad to say, has now almost ceased; and although alcoholic tinctures are sometimes prescribed, yet it is in such small doses, and so well diluted with water, that no fear of intemperance can arise in the mind of the physician. There are very few cases in which alcoholic stimulants are given, and these are never of a chronic character, nor in which these liquids have to be used more than a few days. In regard to drunkenness, community has more to fear from nostrums in the form of "bitters," "schnapps," "cordials," "elixirs," &c., than from anything else.

The several fluids, aside from wines and malt liquors, into which alcohol enters, forming the stimulating or intoxicating principle, are as follows,—they are known as alcoholic liquors, or ardent spirits:—

Brandy, made by the distillation of wine, and which consists of nearly 60 per cent. of pure alcohol.

Rum, made by the distillation of the juice of the sugar-cane after its vinous fermentation, and which consists of nearly 55 per cent. of pure alcohol.

Gin, the result of distillation of an infusion of grain after having undergone vinous fermentation, and which is subsequently rectified from juniper berries; nearly 52 per cent. of pure alcohol may be obtained from it.

Whiskey, produced by distilling an infusion of grain after vinous fermentation, or by distilling cider, or the juice of several fruits. It usually contains from 51 to 55 per cent. of pure alcohol.

These are the principal liquors used as ardent spirits; they contain different proportions of alcohol, and have peculiar tastes, according to the substances from which they are obtained. Other liquors and mixtures are likewise used as *cordials* or *liqueurs*, as the French term them, which are very poisonous and dangerous preparations, being composed of distilled spirits, sweetened, with the addition of aromatics, and flavored by articles which contain prussic acid. *Punch*, *juleps*, and various other mixtures prepared to please the palate and stimulate the nervous system, are much in vogue, especially during the summer months, but they are all alike injurious to the stomach and to the general system when used habitually or too freely. With the exception of alcohol and whiskey, but very little pure liquors are to be had in this country, as they are superseded by the domestic articles manufactured by liquor dealers. An old dealer and manufacturer has given the following formulæ:

Domestic Brandy is made of neutral spirits, one gallon; good brandy, one pint; molasses, a sufficient quantity to color; and sweet spirits of nitre, eight ounces; mix. *Domestic Gin* is made of neutral spirits, forty gallons; good Holland Gin, four gallons; oil of Juniper, three ounces; oil of Anise, one ounce; mix. And it is such trash as this, and frequently even worse, which is being poured down the throats of our countrymen to their certain destruction. When I look around me, and observe the many thousands of our youth addicted to the fashionable, but no less pernicious vice, of drunkenness, the various means taken to ensnare them, the poisonous trash which is presented to them, (these manufactured liquors being more deleterious and deadly in their effects than pure articles,) and the kind of men engaged in manufacturing and retailing, I am frequently led to believe that some agency is silently and secretly at work to destroy the liberties of our country, by first undermining the moral, mental, and physical health of our people through the influence of these means; for, there is no country under the sun in which more ardent spirits are used than this.

As a general rule, all liquors are injurious to the human constitution, the only instances when they are beneficial being in a few diseases. Those who wish to preserve good health, promote longevity, and enjoy the full vigor of their systems, should never indulge in alcoholic, vinous, or malt liquors. Their habitual use produces chronic inflammation of the stomach, loss of appetite, sour stomach, headache, peevish irritability, loss of memory, fetid breath, nausea, diseased liver, jaundice, dropsy, impotency, gout, colic, epilepsy, apoplexy, and mania. No healthy man living needs liquor; when he feels fatigued or depressed, there is no tonic, no stimulant, equal to a draught of good cool water, which produces all the beneficial influences of stimulating liquors without any of their evil effects. It is said that ardent spirits are

necessary in warm weather; so likewise is it said that they are necessary in cold weather—and the advocates of the one doctrine, generally advocate the other also, and practice both. The fact is, that persons who use liquor in cold weather are much more apt to suffer from cold than those who use water; and in warm weather, there are no men less capable of standing any labor or fatiguing exercise, than they who drink intoxicating liquors. It has been observed that in all the epidemics which have occurred in this country, whether in warm or cold seasons, among those who were attacked, hard drinkers seldom escaped, and were always more liable to fatal terminations than any other class of persons. Sometimes we meet with an instance of longevity in a hard drinker, but this is apt to be the case only occasionally, and in no way disproves the fact that alcoholic drinks are pernicious in their effects. Persons have occasionally recovered from large doses of strychnine or opium, but this does not prove that these poisonous agents are harmless when thus used. And it will almost always be found that these instances of longevity are among persons originally of strumous habit of body, for although with such persons, alcoholic drinks produce intoxication as certainly as with others, yet its pernicious influence on their constitutions are not so immediately effected, or observed; indeed, in some instances, the moderate use of liquor with strumous persons has been found of advantage. But this is no excuse for the vice of intemperance, nor any reason why every body should drink such fluids.

In truth, there is not a valid reason in existence for the habitual use, even in moderate quantity, of intoxicating drinks, by persons in health. Some pretend to think that a glass immediately before, or immediately after a meal favors digestion, and hence indulge daily at the dinner-table; but this is a mistaken idea, for the very reverse takes place; the stomach being overstimulated, soon loses its energy, digestion becomes impaired, and the general system sooner or later suffers from these influences. I have said above, that there is no reason for the use of liquors by healthy persons, and I will add, that very few invalids require them, and when they do, they should be especially careful not to constitute themselves or their unprofessional friends, as medical advisers.

“It is too much the custom for persons whose occupations do not require any degree of bodily labor, not only to eat at a meal more than is really demanded by nature, but likewise to eat very hastily, as though they were eating for a wager, or as if the renewing the physical sustenance of the system, was a task imposed upon them, so dreadful, so hateful, that they would hasten through it as rapidly and as carelessly as possible. The effect of this is, that a most grievous burden is imposed upon the organs of digestion; and to perform their duties properly, they have to call to their aid the muscular and nervous energy from nearly all parts of the system; this soon produces a depression of spirits after the meal, or a sensation of drowsiness, or perhaps, a distress and fulness at the stomach, which with some of our more fashionable patterns of morality, is removed by their wine or brandy, either during, or immediately at the close of their meal,

and which course they pursue daily. Others, following the inclination to sleep, awake only to feel yet more depressed, unfit for active thought or exercise, and fly to the bottle for relief. In fact, how often have many of our young ladies, after having eaten what they termed an excellent meal, been heard to exclaim, 'Oh, how delicious a drink of cider, wine, or ale would be, it would do me so much good!' With the young man, however, it is different; he expresses his thoughts only by his actions, as may be clearly ascertained by following him to the bar-room of the respectable tavern. A practice of this kind pursued daily, confirms the habit, and soon makes a drunkard.

"Again, certain conditions of the system, as a morbid action of the liver, debility of the digestive powers, diminished secretion of bile, or the incipient stages of dyspepsia, often create in individuals at irregular and various hours of the day, a desire, or preternatural appetite for stimulants, in many instances so strong and intense that it cannot be resisted, and the individuals seek the bar-room, or the side-board, that they may satisfy this annoying desire. When, were they properly acquainted with the cause, they would shun those places as the most dangerous, and would obtain both relief and benefit from other stimulants, more healthy, more beneficial, and less tempting and hazardous. Indeed I have known many persons who removed the sensation whenever they experienced it, by a good hearty draught of cool water. This circumstance, by cultivating a relish for liquor, has likewise made drunkards.

"Again, behold the young man with all the freshness, energy, innocence, and purity of youth, just emerging from the obscurity of some seminary, in which his earlier years have been closeted, and in which his juvenile mind has been taught and impressed with the importance of virtue both in precept and example. His whole soul is filled with the praiseworthy ambition of doing good, of being good, and of acquiring the friendship and love of all his fellow-creatures, and he leaps into the new and spacious arena, bounded only by the heavens, with all the exultation, with all the animation, with all the undisguised sentiments of happiness, so peculiar to those just entering their career in life, and with principles of the most correct character.

"His friends perceive in him only the talented, the fearless, the generous, the noble, the endearing youth, and they bestow upon him their love, their praise, their encouragements, and their assistance. And his parents—what pleasures, what excellence, what unrivalled reputation have their idolizing hearts preformed for him? Observe, while the youth's virtues are spoken of and approved, how the father's eyes sparkle, how his whole features become illuminated with the feelings of his soul, how animated he appears, while the blood courses rapidly through its various canals; and how the tender mother's bosom heaves with a tumultuous emotion of joy, while the tear of delight springs unbidden from its secret fountain, and sits in the corner of that maternal eye, a dear and sacred gem, far richer than the purest diamond, far lovelier than the most magnificent works of art.

“With guiltless intentions, the spirit of sociality induces a friend to call together a select company, for the combined purposes of pleasure and improvement, and our highly favored youth is one among them. The unhallowed cup of wine is passed around, and is presented to him,—he hesitates, for the genius of Temperance whispers and forbids him—he does not need the vile stimulus, for already has he health, spirits, and vivacity to excess, flowing through his system—he perceives the smile playing upon the lips of his friends, they laugh, they joke, they ridicule him—he falters, but is not yet conquered,—but alas! the coaxing, seducing, winning words of that beautiful young lady cannot be resisted, her persuasions triumph over his firmness, while her brilliant, heart-piercing, bewitching glances, lull for the time all feelings of conscience into a dream of exalted happiness never to be realized, and to please the fair enchantress he pours the cursed fluid down, and breaks the charm which his good genius had mercifully thrown around him.

“How many are they, who could point to some of your sex, young ladies, as being the first to tempt them to taste of that which proved their ultimate ruin, though done in every instance, with the most innocent—the purest of motives.

“Having tasted once, he needs but little persuasion to induce him to try it a second and a third time; and sooner or later we find him surrounded by his young friends at the bar-room of some respectable hotel; there he is the life of the company,—his jokes are the best, his flashes of wit the liveliest, and his disposition the happiest among them. There is no niggardliness about him, for he can swallow with his friends glass after glass of the pernicious liquid which is rapidly destroying him, and pay for it too, like a gentleman, like a clever, whole-souled fellow.

“And how was this brought about? He had tasted one glass at a party to please that party, and whenever afterward he refused to drink with them, that once, that first, that fatal moment affords a precedent upon which to concentrate their forces, and by their laughter and sarcasms, they have finally prevailed. Now, it is impossible for him ever to refuse, he has not only acquired the habit of drinking, but he can no longer, even for a moment, withstand their jeers and ridicule; besides, he has learned to love their company and their praises; for they have sworn that he is the most noble hearted fellow that ever existed, and it is a pleasure to him that they continue to think so.

“In process of time, the fiend makes such rapid inroads upon his health, his appearance, his language, and his actions, that the hotel in which he once held his station as the most respectable, now becomes too respectable for him; the jolly friends among whom he was the best, now become even better than he,—he is cast off, thrown aside, and falls from one degree of genteel drunkenness to another, until the gutter, that receptacle for all impurity and foulness, is made the resting place, the sleeping place of him, the now disgraced and beastly drunkard. His friends forsake and shun him, as they would a poisonous reptile; the mind of his gray-haired

DELIRIUM TREMENS.





father becomes seared and blank, and his heart-broken, but still fond mother, dies with her last words imploring mercy for her lost and wretched son.

“There is hardly any vice but which can be laid aside by those addicted to it with but very little determination, in comparison to that which would cause the intemperate man to leave his cup; for with him, in addition to the habit which he has contracted, and the consequent feelings produced, his nerves have become shattered, his intellect impaired, his energy and ambition destroyed, his firmness gone, his reason a complete wreck, and his whole man, both soul and body, the ruins only of what he once was, now degraded and despised by all.

“It is the moderate drinker that forms the drunkard. He professes to have such a stable, impregnable fortress of firmness in his mind, that he can withstand any attack of the enemy, both openly and secretly; and *perhaps* one out of a hundred may succeed. But then, what immense, what irremediable mischief has that *one* caused; he has invited others to drink, who lacked the firmness of which he so loudly boasts; nay, he has insisted that his neighbor should take a glass with him, only one, single, harmless, friendly glass, when that neighbor has already taken a harmless glass too many; he judges of the firmness of others by his own; and though *he may* stand safe and unscathed, yet how many, through him, have been helped to glide into the pool of degradation and wretchedness. He is the greatest obstacle, the greatest stumbling-block to the complete success of the temperance reformation; he boasts of stability, and all who hear and see, all who govern their actions by his, will not be underrated—it is not in human nature to stand depreciation of mind and intellect; no, if he can be firm, why not they? They are men like unto himself, and it is as much their pleasure and glory to boast of firmness, as it is his; and the example he holds up to them, is followed to their complete overthrow.

“If the moderate drinker is a man of business, he holds forth an example to his clerks or apprentices to sip of the deadly draught,—if a father, he is but a model for his children, for how natural is it among children to imitate their parents,—if a man of high standing in society, those who look to him for a pattern of morals, copy his vices also;—and be he where he may, or what he may, it is all the same, there will be persons who copy from him to their sorrow.

“I consider that the moderate drinker is a dangerous man to society, and to himself. It matters not whether he obtains his liquor at the three-penny grogshop from common glasses, or at the sideboard in his splendid palace, from silver or golden goblets,—the sin, the danger is the same—and the wealthier, the more respectable the man, the greater is the hazard and the heavier the responsibility that hangs over him. The first lessons of all beginners, in intoxication, were as moderate drinkers, but by dint of cultivation they have advanced to the rank of professed drunkards, and so will it be with every moderate drinker, who persists in the habitual use of liquor. He may laugh at these remarks, but let him remember that there was a time

when every drunkard likewise laughed to scorn the idea of *his* falling into the meshes, for he too, poor, deluded mortal, prided himself upon his respectability, his judgment, his inflexibility, and his strength of mind. Even now, take the very moderate drinker who uses but one glass of wine daily; when the hour for the stimulus arrives to which he is accustomed, how unhappy, how miserable are his sensations, until the liquid is swallowed; there is a faintness at the stomach, a depression of spirits, a confusion of the intellect, and an irresistible desire for the demon, all of which vanish with the draught.

“Could the spirits of all the departed drunkards who have ever existed be roused from their deep slumbers, and summoned to appear before us, that they might answer to the question, ‘What made you drunkards?’—they would raise a cry which would affright the earth, and astound the heavens,—which would pierce the inmost soul of every consumer of intoxicating liquors, and make him stand aghast, while terror and dismay would seize upon him, and the large drops of wretchedness, agony, and despair would ooze from every pore—and the shrieking reply would echo through the vaults of heaven—‘moderate drinking—moderate drinking.’

“Moderate drinker, there was a time when the poison had never entered your lips, and you were healthy and happy; there was a time when one glass daily was sufficient, and then you exulted in your firmness,—but soon you increased to a second and a third glass, and with them increased your professions of stability and strength of mind;—and, let me ask, do you not, even now, feel at times that an extra glass would do no harm, nay, that it is required? Ah! that extra glass will soon be added to the list, and extra glass after extra glass will follow in their turn, until your firmness shall disappear like the stately oak before the thunderbolt, and utter ruin will be your portion. If you are in reality the man of firmness you believe yourself to be—if there is not the least danger of your ever tasting a drop too much,—still I say, forbear, forbear! Let not your example be the stumbling block by which others of less power of mind, and who pattern after you, fall into ruin. If you have, indeed, a superior strength of mind, show it to the world by restraining from moderate drinking, and then we will believe you but *never*, NEVER, till then.

“What is drunkenness? Go visit your prisons, and among their dreary cells behold the housebreaker, the felon, the murderer, the outlaw who fears neither the laws of God nor man. Go visit your hospitals, and among their inmates behold those who are afflicted with dropsy, jaundice, paralysis, convulsions, and that most terrible calamity that can befall man, insanity. Go visit your rum-holes, your sinks of iniquity, and observe the bleared eye, the bloated countenance, the palsied and tottering frame, the staggering gait, the poverty and wretchedness, and the detestable deeds of vice, everywhere apparent; and hear the oaths and curses, the vile and loathsome language which issue from the lips of the inhabitants of these dens of sin. And when your soul, sickened with the sight of such human misery and depravity, has turned away filled with horror, disgust, and detestation—know that all this is drunkenness—all this the effect of rum.

"But I would not leave you here,—I would convey you to the drunkard's parents, they whose anticipated cup of pleasure is removed far from them; whose hearts are bowed down with anguish, and filled with desolation and despair, almost to bursting; behold the manifest heartfelt, but yet untold grief, exhibited in those pale, emaciated countenances,—in those heavy, sunken eyes whose springs have long since ceased to respond to the united feelings of parental affection and distress.

"Neither can I pass over the drunkard himself; we behold him, perhaps just arisen from the miry gutter, and reeling his steps homeward; his eyes inflamed, his face swollen and bruised, and his whole appearance indicating extreme wretchedness; there is nothing to be observed, however, which evinces any feeling of the inner man—yet the mind of that man, ruined as it is, suffers to an intense degree. He knows and fully experiences his condition—he knows that he is degraded, and imagines that he never can be again received into respectable society,—he knows that through his folly the wife of his bosom, and his little, innocent children are in a state of starvation,—he compares his former with his present state,—and all these thoughts so harass him that he hastens to the bottle to silence them, to bury them in the insanity of alcohol. And it is now that the children, the wife, are cruelly beaten; that everything hateful and abominable is executed; perhaps he steals, or murders, or performs some crime which entails a mark of shame and infamy on him and his children through life. It is not *the man* who does these things,—it is the drunkard—the man unmanned and metamorphosed into a monster by alcohol.

"I would take you to his ragged, barefooted, and bareheaded little, harmless children, who are suffering from hunger, from cold, or from the unfeeling blows of a drunken father; whose society, owing to the misdemeanor of the parent, is avoided by all the other children of the neighborhood; who are the innocent subjects of abuse and insult; and who are made to bear the disgrace attached to the parent, as though it were a mark set also upon them.

"I would have you visit his residence; everything betokens poverty, wretchedness, and ruin. There is hardly any furniture, and what there is has been nearly broken in pieces by him during his intoxication, perhaps in beating his poor, unoffending wife; the windows are for the greater part filled with old rags or paper; the necessary articles for preparing food, and from which to eat it, have nearly all been pawned for rum, and what remains is broken, such as any of us would throw aside. Although the cold, cutting blast of a powerful northwest wind is forcing its way through the cracks and crevices, and broken panes, yet there is no wood,—no, nothing to enliven the scene, or create the least appearance of comfort,—all is the vacuity of extreme misery.

"The wife who once saw better times, who once smiled at the golden prospects of the future—now, with scarcely clothing to appear decently, much less comfortably clad, perhaps with her limbs and body marked with the blows of a drunken husband, and suffering severely with the pain arising from them—sits mute and tearless, for the fountain of her tears has long

since become dried up. She has done all that woman, all that wife, all that mother could do, to reclaim her miserable partner, and to administer to her own wants, and those of her crying, half-starved children;—but it will not do, one after another everything goes for rum, rum, rum, until exhausted nature, insulted affection, and disappointed hope can hold out no longer. Herself and children are beggars indeed. For the beggary of honest poverty is bliss compared to this—she knows it—she feels it to her very heart's core, and who can describe the agonizing, heart-rending thoughts and feelings which exist in her soul, as a woman, as a wife, and as a mother?—All this is drunkenness!"—*Part of a Lecture by the Author.*

It is too much the case in this country to legislate upon morals, instead of striking at the root of the evil in a more rational manner. Legislation may punish, but it can never persuade nor convince;—indeed, I am fully convinced that all legislation upon this subject at least, is followed by much more mischief than benefit—mankind will not be driven, but they can always be gained by kind words, and proper encouragement and support. Stop the use of rum by law, and the seekers after stimulus will fly to opium—stop this, and they resort to strong coffee, schnapps, and cologne—stop these, and tobacco becomes in demand—stop this, and they find some other article,—for stimulus they will have, even at the expense of health, life, and respectability, and this will continue in spite of law, tracts, lectures, &c., until the right chord is made to vibrate—the intellect, and the intellect properly trained and directed. Tell a man that the law forbids him to drink liquor, does this convince him of the error of drinking, any more than if there were no law? Does it afford the least proof that he is injuring himself? On the contrary, will it not be more likely to irritate him, and to drive him to still greater excesses in drinking, that he may show defiance to a law which he considers unconstitutional, and an unwarrantable interference with his rights and privileges as an American freeman? In fact, he observes that every reform, no matter what it may be, or how it may commence, is ultimately employed as a political lever to further its own destruction, as soon as the purposes for which politicians seized upon it are accomplished, and he, therefore, considers all legislation upon moral reforms, as so many political humbugs, and thereby, instead of his dangerous progress being retarded, it is very much accelerated.

Let those who are so eager for the spread of temperance, instead of shirking all responsibility upon the officers of the law, take it upon themselves—let them labor, and labor, too, in the right way—lectures and tracts may do some good, but very little compared to that which could be done by proper education—not the routine, parrot-like teaching of the present day, but a teaching which will *impress* and *firmly establish* in the susceptible minds of our children, good and wholesome principles, so that when they are old they will not depart from them. *Teachers of MORALS*, who shall not only explain, but who shall train, that is, cultivate and *firmly establish* in the minds of children correct principles, are as necessary as teachers of *reading, writing, music, dancing, &c.*,—when these are once learned they are never forgotten.

The tender mind of the child is capable of receiving impressions which will be lasting, and which will govern his future thoughts and actions, as a man, and as a citizen. The virtues or vices imprinted on his early intelligence never forsake him, and when years have rolled him into his dotage, when the finger of time has placed its mark upon him, when he loses the remembrance of events and incidents which transpired while in the vigor and prime of manhood, still he retains very forcibly a recollection of the scenes and impressions of childhood, and can bring them to view as vividly as though they were but the occurrences of yesterday. Were there but one-fourth as much money paid away, but one-fourth as much time consumed, and but one-fourth as much exertion and industry bestowed upon the proper cultivation of virtue and morality among children, as there is expended upon their improvement and progress in writing, reading, and all scholastic attainments, (for one may be a perfect Solomon in wisdom, and yet be vicious for want of correct early education,—depth of knowledge does not necessarily imply depth of virtue,) what a glorious, moral generation would be the next!

There is great resemblance between the state of intoxication, and an attack of incipient apoplexy or palsy; as witnessed in the staggering gait, loss of perfect speech, stammering, double sight, blunted feelings and perceptions, &c., the result of an increased amount of blood in the blood vessels of the brain. When the intoxication is complete, the countenance is bloated and dark-colored; the sleep profound and comatose, the breathing stertorous, the eyes fixed, the pupils enlarged, the person quite unconscious, the same as in apoplexy. Sometimes spasms of an epileptic character will be present. When an individual is in this condition, he should be conveyed to a cool room, all ligatures or tight clothing about the neck and limbs removed, in order that they may not interfere with the circulation, and he should be placed in a horizontal position with his head somewhat elevated. Cold water should be poured upon his head and neck, and as soon as he is able to swallow, a mixture of salt and mustard in warm water should be given frequently until free emesis is produced. In the meantime counter-irritation must be produced by whipping the soles of the feet rather energetically. As soon as the patient recovers put him in bed with his head raised, and allow him to drink of good fresh milk. If, after six or seven hours, he is restless and wakeful, a powder composed of one-fourth of a grain of sulphate of morphia, and one grain of sulphate of quinia, may be given, and, if necessary, it may be repeated in an hour or two. I have pursued this course in many cases of the above character, and always with excellent results.

CHAPTER VIII.

Clothing.—Flannel.—Cotton.—Silk.—Linen.—Hats.

CLOTHING is required not only for the purpose of concealing nakedness, but also to protect the body from the various changes of the atmosphere, and

maintain it at a right temperature. The latter objects are attained, not by any warmth contained in the clothing itself, but from the fact that it hinders the heat of the body from being too rapidly carried off. In cold weather more clothing is required than in warm, though much depends upon habit, as many persons, and especially the natives of this country, pass safely through the most severe winters, with comparatively little or no clothing.

As a general rule, the amount of clothing necessary for each person must depend upon the ability of his system to resist the changes or modifications of the seasons; care being always taken that the body be kept comfortably warm. Too little clothing, or too much, is equally prejudicial to health, the former rendering one liable to attacks of disease from cold, &c., the latter causing a degree of debility and lassitude corresponding to the superfluous amount of warmth produced, and which will eventually cause disease. Sedentary persons always require more clothing than those engaged in active physical labor; aged persons require more than young ones; because the functions of the system in the latter are more regular and active, and the production of heat occurs more rapidly, and is of a higher temperature, than in the former. The invalid, and those of delicate constitution, require more than the healthy and robust; infants, from the small degree of resisting power in their systems against cold, should always be warmly clad. Much of the fatality among children is owing to the absurd practice pursued by many parents, of attempting to harden their systems, by exposing them to cold weather with but slight clothing; the inhalation of pure, fresh air is beneficial to them, but the lack of clothing constitutes the principal danger.

No arbitrary rules can be given relative to the precise quantity of apparel which should be worn by persons, as this will depend upon the various circumstances connected with each individual case. We should so regulate the amount of our clothing as to keep the body comfortably warm, and at the same time secure it from any dangerous impressions arising from sudden changes in the weather, being very careful not to wear summer clothing to too advanced a period in the autumn, and not to remove the winter clothing too soon in the spring; this latter change should always be made gradually. Many persons have lost their lives by imprudently removing their winter garments too early in the spring, because a few days of warm weather had rendered them rather uncomfortable. As light-colored clothes have but little attraction for heat, they are best adapted for warm weather; while black clothes, from their great attraction for heat, are more suitable in cold seasons. No objections can be raised to a display of taste in the form, color, and elegance of dress, for this exerts a moral and otherwise beneficial influence, both in domestic and public life; but these should never be consulted at the expense of health. In the preparation and character of our habiliments, health and elegance should be equally studied. During the hot, sultry days of summer, when copious perspiration and increased temperature of the body is produced even by the least exercise, making one feel very uncomfortable, great care must be taken not to expose one's self to cold by removing a portion of the clothing too soon, as well as to avoid sitting in a current of

air. The body should always be allowed to become somewhat cooled before throwing off any garment.

Much disease and loss of life occur annually from wearing damp clothes, as stockings, under garments, &c., as well as by sleeping in sheets not thoroughly dried. Too much attention cannot be paid to this matter, as a disregard to it is always attended with great risk; fevers, rheumatism, pleurisy, consumption, or other serious forms of disease, being the penalty. I have known many young ladies to hasten their death by wearing damp clothes, or bathing their feet, or whole person in cold water, at the menstrual period; mothers should explain these matters to their daughters, or, if they feel a delicacy about it, then let them purchase books on the subject for their girls to read, that they may not foolishly sacrifice their lives. Persons sleeping in hotels, or on steamboats, should always be especially careful to examine the bed-sheets, as it is in such places that damp or improperly aired or dried linen are more apt to be found.

Dr. W. E. Coale says, in an excellent little work, entitled "Hints on Health," and which should be in the hands of every adult in the land:—"Another important consideration in selecting materials for our dress is, that they should be of such a nature that they can be readily cleansed from the exhalations from our persons. It must be remembered, that in the coldest winter, as well as in the warmest summer, our perspiratory glands are at their work, sending forth sensible or insensible perspiration,—of which a large portion is lodged in our garments; it is poisonous there, and must be dislodged. For our outer woollens, the sun's rays are an admirable cleanser, decomposing and dispersing the condensed fluid; for those worn nearer the person, nothing but the wash-tub will suit, and this used at very short intervals. We, therefore, deprecate very strongly the habit of wearing cloth trousers without cotton or some washable drawers beneath, and of women wearing quilted and flannel skirts which are not washed unless they *look* soiled. A week's perspiration makes them more truly unfit for wear, than a month's dust, or any such *clean* dirt, could. For the same reason, a silk cravat, worn week after week, without anything between it and the bare throat, is an equally objectionable fashion; he who does it carries his own filth about with him. We use strong terms, but we do not conceive that any can be too strong to express the repugnance that all ought to have to the refuse of their own bodies. Under this head, also, we suggest that the boots and shoes be frequently sunned." I consider these remarks of Dr. Coale so important, that I would advise every reader to stop here, and peruse them.

Clothing should always be commodious, not interfering with the motions of the joints, nor occasioning inconvenience by its weight or tightness, and although an attention to these conditions is important at all ages, it is more especially so in early life, before the body has become thoroughly developed. When clothes are tight they interfere with the circulation of the blood, giving rise to venous accumulations in various parts of the body; they likewise prevent the perfect development of the muscles which they may compress,

causing them to become emaciated and debilitated. Tight garters prevent the free use and action of the muscles of the limbs, obstruct the flow of blood in the legs, and thereby interfere with the development and nutrition of the parts, producing numbness and swelling of the limbs, or an incurable enlargement and weakness of them. Stocks, cravats, neck-kerchiefs, &c., when worn tightly around the neck, are decidedly dangerous; by their pressure they prevent the blood from flowing freely, in its return passage from the brain to the heart and lungs, and an undue quantity of this fluid being thus forced upon the brain produces a more or less constant sense of over-fulness of the vessels of the head, headache, flushed face, vertigo, apoplexy, or other fatal diseases. When an undue compression is made about the chest and waist, the perfect development of the lungs is prevented, breathing is interfered with, as well as the normal action of the heart, which effects must necessarily be detrimental to health and longevity. When the abdomen is improperly compressed, the stomach, liver, and intestines have their functions impeded, indigestion is produced, and, in females, falling of the womb, and from these arise a host of painful and distressing symptoms. The use of corsets, at one time so fashionable a custom among females, is highly reprehensible. Beside being of no advantage whatever, it is a cause of permanent and serious disease;—spitting of blood, consumption, dyspepsia, falling of the womb, affections of the liver, &c., &c., are a few of the maladies resulting from its use; and among married women, miscarriages, sterility, deformed children, &c. No sensible woman will at this time be guilty of the practice of wearing corsets, and it is a subject of gratification that females are acting with more wisdom and more prudence, by totally discarding this absurd article of dress for others more consistent with health, beauty, and prolonged life.

Among the materials employed in the manufacture of clothing, the principal are wool or flannel, cotton, silk, and linen. *Flannel* serves to protect the body against the too rapid escape of heat, and should be worn whenever it is desired to accumulate heat, or to prevent its too rapid dissipation from the body; and also whenever the climate is variable, the changes being sudden and frequent. It is likewise very useful to invalids, especially those subject to cough or repeated colds, rheumatism, neuralgia, gout diarrhea, nervousness, and other forms of disease. The aged almost always find it of inestimable service to them; and even infants and young children may wear it with much benefit during the cold and damp seasons of the year. Healthy, robust persons do not require flannel, unless they are exposed to labors which render it necessary to use means to protect themselves from sudden changes of temperature or in severe, cold weather; it is only during the decline of life, after forty or fifty years, that they will, as a general rule, find flannel garments necessary or useful. In cold climates, under garments should be worn steadily during the whole of the cold and variable weather; and if no other part of the person is protected, the chest, abdomen, and back, should always be warmly covered. It is better not to wear flannel next the surface of the body, but to have a

light cotton shirt between it and the body, which will be found more agreeable and beneficial; at the same time it will obviate the itching or irritation of the skin to which some persons are subject when flannel comes in contact with the body. Flannel should always be removed previous to retiring to bed; it is not proper nor conducive to health, to wear it during the sleeping hours, beside, it renders one more liable to the influence of cold after arising from the bed and going out into the air. Flannel clothing should be frequently changed, as it very soon becomes filled with the foul impurities emanating from the body.

“Our summer evenings are often very chilly, and many a serious cold is caught from too light clothing, after a very hot day; but if we have flannel next the skin we are in a great measure preserved from sudden falls of temperature. The advantage of wearing flannel, even in hot climates, has been settled by the combined experience of the most intelligent observers in both army and navy. The wearing of flannel shirts and drawers, and keeping the lower decks of a ship very dry, have been the means of preserving the health of the crew of one ship, in a climate where others, neglecting these precautions, have suffered much from sickness.” *Beale.*

Clothing manufactured from *cotton*, forms a salutary and comfortable article of dress during warm weather, and, as a general rule, is superior to any other; indeed, as a garment to be worn next the body, it may be used throughout the year in preference to flannel, silk, or linen, the exceptions in favor of the former having already been named above. Cotton garments preserve an equal temperature of the surface of the body, and protect it from sudden changes in the weather, though in cold weather it is not equal to flannel for these purposes. Many persons to whom the wearing of flannel is very disagreeable, substitute for it during cold weather cotton or cotton flannel; this is a good article, while the nap remains, for preserving the warmth of the body, but when it has become worn off, new material should be employed, as the old has now lost its principal character, viz., that of being a bad conductor of heat. Some individuals find warmth and comfort, both during the summer and winter seasons, in cotton garments alone, merely increasing their quantity or thickness in the colder months; but persons of delicate habit, or disposed to colds or other disease, should be careful how they imitate such measures.

Silk, in some respects resembles cotton, by retaining, and even exciting the warmth of the body. It is in no respect superior to cotton, and is not in very common use on account of its high price.

Linen, is by no means suitable for a dress, to be worn in contact with the body, at any time. To retain warmth and protect the surface from sudden vicissitudes of temperature, the covering of the body should be a bad conductor of heat. Linen is a good conductor of heat, and consequently cannot maintain an equilibrium at the surface, nor shield it from the direct effects of sudden changes. It should never be worn next the body. When linen becomes moistened with the perspiration emanating

from the body, it imparts an unpleasant sense of chilliness as the body cools, to the parts with which it comes in proximity, while with cotton material no such unpleasant effect is produced.

Attention should always be paid to the apparel worn upon the head. Caps, or any kind of artificial covering, are not only unnecessary, but frequently injurious; by irritating the scalp and keeping it continually at too high a temperature, various diseases are produced, as sores, eruptions, and other difficulties about the scalp, forehead and ears. The cooler the head is kept, not amounting to a painful sense of cold, and the more it is exposed to the action of the atmosphere, the less danger will there be of these various affections. For the same reason, it is a very objectionable practice to wear night-caps. During the first weeks of infancy, when the hair of the child is not profuse, (and in cases of premature baldness,) caps may probably be of benefit in cold weather, but not at other times:—protection from too great a degree of cold is always proper among all persons, but care should be taken not to cultivate a tenderness or susceptibility to ordinary temperatures, or slight changes.

The out-of-door covering to the head, as the cap, hat, or bonnet, should be light, of sufficient amplitude, and suited to the particular form of the head. If too weighty or warm, or if it fits too tightly, the covering will cause pain and discomfort. Baldness is occasioned much more frequently than is imagined, by the constant use of a warm hat or cap; the hair-glands becoming debilitated in consequence of the high temperature incessantly maintained, and the head being kept continually steamed with its own excretory fluids. Whatever covering is worn upon the head, should not only possess the requisites referred to above, but it should be so arranged that by means of *several apertures*, the scalp may be kept in constant contact with atmospheric air, while at the same time its filthy excretions, instead of being pent up within the hat, may pass off, leaving the head free from their deleterious influences. Any hatter who can devise a neat, light, and tasty hat, with this improvement, (*several apertures instead of one*,) will confer an immense benefit upon mankind. As heat is attracted and retained by all dark-colored substances, while the reverse happens with those which are white, a light-colored hat or bonnet is the best cover for the head during warm weather, and a dark-colored for cold seasons. The face and eyes should always be well protected from the sun by means of a broad brim to the hat; the present fashion among females, of using a mere apology for a bonnet, and wearing it almost between the shoulders, giving to the eyes no protection whatever during an out-door promenade, is highly favorable to diseases of these organs, as, weakness of sight, inflammation of the eyes, &c.

The hat is frequently used as a general receptaculum for newspapers, bills, papers, gloves, handkerchiefs, and indeed any thing that can conveniently be placed within it, and the usual result of such a careless and imprudent measure, is premature baldness. In some sections of country the hat is never removed from the head even on entering a room, but is worn in doors and out of doors as tenaciously as though it were a part of the head, and the

removal of it would prove a serious matter; this is not only contrary to the rules of etiquette, but also to the laws of health—the head should be exposed to atmospheric influence as often as the opportunity for so doing is presented.

CHAPTER IX.

Exercise.—Rules for Exercise.—Sailing.—Walking.—Running.—Dancing.—Swimming.—Friction.—Shampooing.—Gymnastics.

Exercise is indispensable to good health for both men and women; it stimulates the circulation, and promotes the processes of digestion, nutrition, absorption, secretion, &c., by arousing the several organs of the body, and causing them to perform their functions with a healthy activity. A life of indolence or inactivity is always attended with a sluggishness, or torpid condition of the several organs of the system, proportioned to the want of proper exercise, and is almost invariably followed, at a later or earlier period, by some form of chronic disease. Consequently, we find that those persons who are accustomed to daily exercise, or labor in the open air, are more robust and vigorous, and attain a more advanced age than those who lead sedentary, inactive lives, or who are confined for the greater part of the time within doors. There is nothing which will so effectually impart power and activity to the body, strengthen the appetite, improve the powers of digestion, and fully and perfectly develop every organ and part of the body, nor which will so positively fortify and exhilarate the mental powers, as exercise. This is owing to the fact that every organized part of the system is affected by the arterial blood, only in proportion to the active employment of the vital force of those parts; thus, the individual, as the blacksmith who gives daily exercise to the muscles of the arm and back, acquires a great increase of these muscles in size, firmness, and strength, together with a healthy, robust, vigorous constitution; while in the person unaccustomed to active exercise, the muscles are flabby, emaciated and feeble, and the constitution becomes enervated and invalid. It is undoubtedly a correct observation, that, nearly all forms of disease can be cured by a constant course of exercise and temperance, without the use of a particle of medicine.

To derive the greatest advantage from exercise, certain rules must be attended to, and the benefits received will be proportioned to the degree of attention bestowed upon them. Among these rules the following are the most important:—

1. Exercise should never be taken as a task, but as a recreation; the mind must be agreeably occupied as well as the body; all serious thinking must be dispensed with for the time, and when possible, the society of one or more agreeable and intelligent friends should be procured, because, the more pleasing the mental excitement, the more beneficial the physical: they mutu-

ally depend upon each other for health and strength. Hence, gymnasiums, riding parties, sailing parties, swimming parties, pic-nics, &c., where both sexes congregate for exercise and amusement, and for relief from their daily routine occupations, are extremely useful. Amusing plays at parties within doors, although less common than formerly, are, nevertheless, a source of health to children as well as adults, and should by all means be encouraged by parents, teachers, and those who supervise the public morals; while at the same time, card-playing, wine-drinking, the eating of rich and indigestible cake, candies, &c., and late hours should be discountenanced.

2. Exercise should never be carried to fatigue; no advantage is derived from a violent, fatiguing course of exercise, especially when irregularly practiced. He who would be benefited by exercise, must commence with the gentler kinds and gradually proceed to the more laborious, according to the degree of improvement of his physical powers, and he must likewise practice daily and with regularity. A good appetite after exercise, or, a ready rallying from the fatigue occasioned by it, are indications that it has not been carried to excess.

3. Exercise in the open air is always preferable to that within doors; because the consumption of the oxygen which is constantly being inhaled into the lungs, is more rapidly replaced in the former than in the latter case, and there is, likewise, no accumulation of confined carbonic acid gas to be eventually retaken into the lungs by inspiration. Hence, out-of-door parties are more useful to health than those within doors or under cover; though the latter may be made less objectionable by permitting a free current of air to circulate through the rooms occupied for such purpose. A damp atmosphere is less conducive to health than a dry one.

4. The clothing worn while taking exercise, and indeed at all times, should never be tight, so as to compress any portion of the body whatever, but should be rather loose and easy, permitting a free motion of the muscles and joints of the limbs and body in every direction.

5. Exercise should never be taken upon an empty stomach, nor immediately after a meal, nor should a meal be taken immediately after exercise; a neglect of either of these precautions may be followed by serious effects. The best periods for exercise are in the morning, an hour before breakfast, having first eaten one or two crackers; an hour, or an hour and a half before dinner, or an hour after a light supper.

A meal should never be eaten for at least an hour after having taken active exercise, but if the appetite be keen, a cracker may be taken, or a glass of milk, or other light article of diet, which does not disagree with the person's stomach.

Many business men, medical students, and others of sedentary professions, entertain the erroneous idea that a long walk or ride immediately before and after a meal is beneficial, and consequently take their meals at a considerable distance from their places of business. A great amount of injury to health is occasioned by such a course, and much of the dyspepsia of the present generation is owing to this ill-timed exercise, aided by a hasty and imperfect mastication of food.

6. The exercise taken should vary in its character, and not be confined to any particular part of the body. All parts should be called into action, as much as possible, which may be effected by walking, running, leaping, lifting, swimming, fencing, boxing, riding on horseback, &c. And all these modes of exercise will be found advantageous to male and female, for it must be remembered, that the female requires as much fresh air to oxydize her blood and invigorate her lungs—as much exercise to strengthen her muscles, and stimulate her digestive powers, as the male. The more varied the exercise the greater will be the number of organs acted upon by it. The lungs may be exercised by shouting, halloing, singing, laughing, &c.

7. After having exercised, be careful not to expose the person to a draught of air, to a decreased temperature, nor to any circumstance which may give rise to cold, or an inflammatory attack. This rule should be well attended to, because it is a very important one, a neglect of which has been followed by fatal results. It is much better to add clothing to the body, after having taken considerable exercise, and allow the system to become gradually reduced to the natural temperature, before removing it, than to divest one's self of any part of the dress, for the purpose of feeling a momentary degree of comfort, by a rapid, but highly dangerous cooling of the body. The wearing of a flannel under garment will in a great measure prevent any injury to the system from a rapid cooling of the surface of the body.

Exercise is of two kinds, *passive* and *active*. Passive exercise, although not of such decided advantage to the system as the active, will, however, frequently be found useful, especially in those cases where the latter is contra-indicated, or, where, from various circumstances it cannot be practiced; and, as there is only a very slight activity of the muscular and mental system in this kind of exercise, the active form will, among by far the greater number of persons, be found the more preferable. Passive exercise includes riding, swinging, sailing, and friction to the surface when made by another person; active exercise includes walking, running, dancing, swimming, friction to the surface, and all movements by which the muscles of the individual are exercised without any extraneous assistance. Some persons recommend sawing or splitting of wood, digging, working in a garden, &c.; these are very appropriate exercises for sedentary individuals who have not lost their health, but are extremely improper for invalids, on account of the lack of any diverting mental excitement at the same time. Invalids whose health and strength will permit, will find considerable advantage from fencing, boxing, playing ball, hunting, dancing, &c.

Riding on horseback is a very healthy exercise, particularly for invalids, but to be of much benefit, it must be rendered agreeable and exciting; the mere task of riding over the same ground daily, with no new novelties or diversions to amuse the mind, which is constantly occupied with the idea that the exercise is for health, and with hopes or doubts of the result, is eminently calculated to do more harm than benefit. Several routes should be taken, the scenes of each day should be varied, and, if possible, the

society of one or more agreeable companions should be procured, that the attention of the invalid may be withdrawn from himself and become interested in other matters. The distance to which horseback riding must be carried, and the gait of the horse, as walking, pacing, trotting, or cantering, will depend entirely upon the strength of the individual, and the state of his health. In most cases, an hour or two on horseback, every pleasant day, will suffice, or, if possible, half an hour or an hour may be passed in this species of exercise every day, when the weather is not damp or too cold. Benefit may be derived from this kind of riding, in nearly all unhealthy conditions of the system.

Riding in a gig, buggy, or carriage, is of very little service, except to those who are unable to walk, or ride on horseback, and in such riding, the more the body is jolted or exercised the greater will be the amount of benefit derived; this may be obtained by choosing a rough road. Riding in vehicles is very apt to occasion a stiffness of the limbs, and a weakness of the muscles of the back or legs, and a benumbed, swollen condition of the feet. It is always an advantage for the invalid himself to drive, because he thereby exercises and excites the mind as well as the body; and if the conveyance is a carriage, a free circulation of air should be permitted, by keeping the windows or blinds open. Invalids should not expose themselves to the morning air, until the sun is an hour or two high; this is a very necessary precaution, especially in sickly or malarial situations.

Sailing will frequently be found a very healthy exercise, depending, however, upon the kind. Thus, rowing a boat is adapted only to the more healthy and robust, to whom it imparts strength, besides expanding the chest, and developing the muscles of the arm; it is an improper exercise for most invalids, and should never be pursued to the omission of other exercises by even the healthy, as it tends to develop only one part of the body, while the remainder continues unexpanded, thereby producing an ungainly aspect of the person.

A journey by sea to Europe, or to some distant port in this country, will be found of much service to nearly all classes of invalids; the motions of the vessel, sea-sickness, change of scene and mental action, are all conducive to health; but all these advantages may be lost, if especial attention be not paid to diet and regularity of the bowels and kidneys. Wines, rich cakes and pastry, high-seasoned food, variety of dishes at a meal, and all species of high living, are incompatible with health, and should ever be discountenanced. The practice of sending persons in the last stages of consumption to the South, is extremely improper; it merely amounts to saying, "that the physician cannot cure his patient, and not desiring to be annoyed by bestowing further professional attendance, he recommends this as a certain mode of getting rid of him." Nearly all consumptives who are ordered South, die while there, and, as a general rule, those who do return seldom live over a few months. When a person with a long-standing or rapidly debilitating disease of the lungs is advised to go South by his physicians, he had better make up his mind to pass the few remaining days

of his life at home, among relatives and friends who take some interest in his welfare, and who will cheerfully administer to his wants, instead of among strangers whose only humanity extends to the contents of his purse. A well-educated and skilful physician seldom advises his consumptive patients to a southern residence; or if at all, it is in the earlier stages, before the disease has fully developed itself.

Sailing in a steamboat, or in a sail boat, is of no value as an exercise; its advantage depends entirely upon the change from an impure city atmosphere to one of greater purity, the change of scenery, and the pleasing applications of the mind; however, it will be found very beneficial to those who are convalescing from exhausting diseases, as well as those who are unable to make any active exertion.

Walking is the most natural exercise that an individual can take, as well as the most healthful; it calls every limb into operation, invigorates the circulation, increases pulmonary inspiration, and at the same time inspires and amuses the mind. Some rules are necessary to be observed even in walking, especially by invalids; thus, they should never walk against a high breeze, as the exercise is too severe and fatiguing, beside being apt to affect the lungs; neither should they select a location for their promenade in which the particles of dust floating in the atmosphere are observable, as these would prove very injurious to the lungs and air passages.

In using this species of exercise for health, individuals should select uneven ground, which is preferable to plain ground, from the fact that ascending and descending hills afford more exercise for the lungs, and call into action a greater degree of muscular power. Very weak persons, however, should choose plain ground only. The place selected should be dry, and where pure air can be inhaled, avoiding the neighborhood of marshes; a rather elevated situation is better than low ground. An agreeable companion to amuse the mind, and one who can "keep step," will be a very useful addition. Reading or serious reflection should never be indulged in while walking for health; the former is injurious to the eyes, the latter to the mind, and either will destroy nearly all the beneficial results that would otherwise be realized from the exercise. During the summer months, it is better to walk in the morning and evening, and not in the middle of the day, unless a cool, shady place can be found, that the person will not be exposed to the excessive heat of the sun. In the winter, any portion of the day may be selected for engaging in this exercise; but at all seasons, the best time for walking is about half an hour or an hour after a light breakfast. The walk should be steady, uniform, and at a gait not calculated to fatigue, being somewhat slower at the commencement than is afterward taken; and the range of the walk should be occasionally varied, so as to produce new impressions upon the mind, which will have a corresponding sanative effect upon the body. Persons in the country will find it frequently beneficial to carry a gun with them while roaming through the woods, as the mind will be happily engaged in the search for game, or even firing at a mark.

Literary persons, and those engaged in sedentary occupations, who cannot take much exercise of this kind abroad, should endeavor to accustom themselves to walking in their rooms, from time to time, instead of sitting constantly at a desk or table; and authors will find it advantageous to have a high desk at which they can stand while writing, and be allowed to walk up and down their rooms while reflecting or forming ideas. Although this is not a substitute for proper exercise, it is far better than no exercise at all.

Running is only walking at a rapid gait; it is rather a severe and fatiguing exercise for adults, unless they have been accustomed to it, or are of healthy, robust constitutions. The muscles are more rapidly and more powerfully called into action, the lungs are more greatly exercised, and the circulation more actively increased, than in simple walking. It is a species of exercise which seems to have been designed by nature more especially for children, that all their various organs may become simultaneously developed, and it is certainly an exercise which they never fail to enjoy when the opportunity offers. I would call the attention of parents and teachers to the fact, that exercise, and considerable exercise too, is absolutely necessary for the strengthening and perfecting of both the mental and physical organizations of children. Hence, in all schools, at the end of every hour, or immediately after every lesson, about five minutes should be allowed for the children to "run around the block," or in some neighboring place; and this course will be found highly advantageous to them, increasing the activity of their minds, and at the same time improving their bodies. Indeed, the teachers would find themselves materially benefited by a little physical recreation at such periods. There is not enough attention paid to the physical training of children; many parents seem to think that as they pay teachers to cultivate the minds of their boys and girls, all attempts to improve them in bodily health are impositions, not bargained for, which consequently ought not to be paid for. When will parents learn common sense on these points?

Dancing is a very salutary exercise when properly performed; it combines action of the various organs of the body with healthful mental recreation. Dancing should be performed in the open air, or in a large room well ventilated, and those who practice it should be careful not to persist in it too long at a time, nor engage in it too violently, as either is detrimental to health. The dress of those who dance should always be sufficiently loose not to confine any part of their body too tightly, allowing an uninterrupted circulation of the blood, and a free play of the muscles. When dancing is continued to a late hour of the night, or to an early hour in the morning, in crowded, heated and illy ventilated rooms, it cannot but prove deleterious to the system; indeed, any active exercise, continued during the hours that the system should be at rest, is unhealthy; and the evils to the constitution arising from such unnatural modes of enjoyment are increased tenfold by the use of rich, indigestible cakes, pastry and confectionaries, alcoholic and stimulating drinks, and an exposure to the

cold night air, when the body is in a state of fatigue and perspiration from exercise. Many, very many of the young and gay, have, from these causes, had the germs of disease implanted in their systems, hastening them, in a remarkably short time, to their graves.

Dancing at pic-nics, at home, or even at evening parties, is to be commended, when the above deleterious measures are not combined with it.

Swimming is a useful and agreeable exercise for those who are strong and healthy. It should not, however, be carried to fatigue. In swimming we not only have the advantages resulting from the constant and powerful exercise necessary, but likewise from the bathing. It is a mistaken idea that persons should be perfectly cool previous to entering the water, for the cold water exerts a depressing influence upon the system for the time being, and there is more danger of contracting cold or other unpleasant results from plunging into it while the body is cool, than when it is somewhat excited. Care, however, must be taken that the body be not too warm, nor in any way fatigued; and those whose systems are debilitated will find swimming in cold water not so advantageous as is popularly supposed. Indeed, the observations made in relation to the cold bath, [which see,] are pertinent to swimming. Every person, male and female, whose health and strength will permit, should be taught the art of swimming, not only on account of its utility as regards health, but also that, when persons who have not acquired the art are in danger of drowning, they may be enabled to preserve them.

Friction of the surface of the body is a species of exercise, that whether performed by the person himself, or by an assistant, will be found highly serviceable to all classes, whether healthy or invalid. It cleanses the skin from accidental impurities, facilitates the flow of blood in the small blood vessels of the skin—invigorates the brain and nervous system, assists muscular development and power, improves the organs of digestion—communicates an agreeable glow to the entire system, and renders it more capable of resisting disease, as well as less liable to attacks of cold or other maladies arising from exposure to sudden changes of the weather.

In the treatment of persons laboring under chronic diseases, friction of the skin will be found a very valuable measure, especially in cases of consumption, liver affections, dyspepsia, rheumatism, gout, all female difficulties, &c.; it will also prove highly useful in the case of delicate individuals, and in children, promoting the growth and physical energy of the latter, and lessening their liability to attacks of those diseases so common to early age. Persons who are prone to wakefulness, may induce a disposition to sleep, by the use of very light suppers, and by bathing the body, previous to retiring for the night, with tepid water, and drying with brisk friction. All persons of sedentary occupations will derive much benefit from the use of frictions daily.

Morning is the most appropriate time for using friction, immediately after rising from the bed, when the stomach is unoccupied with the digestion of food; and where this period of the day cannot be spared, the

exercise should then be taken previous to going to bed. Every individual should make use of it at least once daily, for the purpose of comfort, health, and strength. A flesh-brush or coarse towel should be rubbed over all parts of the body and limbs, for a half an hour or more, or until the surface assumes a red appearance and is accompanied with an agreeable glow of heat. If the body is previously sponged with cold or tepid water, the beneficial effects will be augmented. When from debility, corpulency, or other valid cause, an individual cannot apply friction to his own body, he should secure the services of another.

Shampooing, in which the limbs and body of a person are rubbed and kneaded by another, although seldom employed, will not be found less advantageous than friction; indeed, in many instances of disease, it will be found a most important measure to aid in promoting health. Persons who are corpulent, or too lean, may be changed to an opposite condition, by an attention to diet, and proper course of exercise, aided by shampooing and frictions of the skin.

Gymnastic exercises are very useful, whether employed by the invalid, or those of robust health. When properly regulated by a good teacher, these exercises promote the healthful action of all parts of the body, invigorating and strengthening the constitution, and tending greatly to the establishment of health and longevity. All persons, and especially those who lead a sedentary life, as clerks, shop-keepers, merchants, authors, engravers, &c., &c., will find it very profitable to health and mind, to devote an hour or two, daily, to the exercises of the gymnasium, directed by an experienced teacher. Indeed, the mechanic, whose daily labors call into action only a certain class of muscles, while the others rest unemployed, will in the gymnasium, be enabled to reinstate harmony in the growth and vigor of all parts of his body, by giving them a proper and equal degree of exercise.

When we consider the little attention which is paid to the laws of health and longevity, by the citizens of this country, in their eagerness to accumulate wealth at all risks, we cannot be surprised at the indifference manifested by them in relation to gymnasiums. It is not because such institutions are overlooked or underrated, that they lack patronage, but because in this locomotive age of business, traveling, and almost everything else, save reason and common sense on matters of health, the great public cannot *find the time* to attend to such matters. Every city, every town, every village, should have its gymnasium, open to all classes of society, requiring only the payment of a trifling sum by each citizen to keep the place in repairs, and furnish a salary for a good gymnastic teacher; or still better, these may be paid from the public monies of such places. I am gratified to learn that in many of our cities, the sensible young men have formed gymnastic clubs, for the purpose of cultivating and improving their constitutions, and it is hoped that in the absence of any public action on this subject, these private associations will increase in numbers. Still, it is always desirable to have a good teacher, to direct the exercises, because much harm may arise from an indiscriminate and improper use of them.

Nor are females to be excluded from these institutions, notwithstanding the customs and ridiculous prejudices of society are opposed to both girls and women participating in those sports and exercises which are essential to a healthy development of mind and body. Indeed, when we reflect upon their peculiar organization, their delicacy of structure, and their special functions on the one hand, and their sedentary habits, together with the modes and customs of society, to which, in a great measure, they feel obliged to conform, on the other, we cannot but be astonished that disease is not more extensive and fatal among them than we find it. Females require exercise as much as males—they have muscles to develop—blood to aërate, —nerves to invigorate, and brain to strengthen and improve, as well as men—and if these are neglected, it will matter but little how much man strengthens himself—for his offspring cannot be otherwise than deficient in physical and mental conformation. Where bodily health and proper mental cultivation exist, with true affection, there we find domestic happiness—in such families there needs no “woman’s rights,” nor “free love” associations to effect reforms. These agitations are the results of a sickly morality in society caused by a depraved condition of the body and mind. Improve these, cultivate them properly and thoroughly, and then men and women will be virtuous, happy, and free.

Calisthenics is the name given to a series of bodily exercises, adapted to the development of the female system; they are inferior to the true gymnastic training, but are preferable to no exercise at all. Females, from their comparative inaction and confinement within doors, should exercise in the open air as much as possible.

I must again advert to the fact that children at school do not have sufficient exercise; all the money, all the time, all the efforts are devoted to the cultivation of the mind, while the physical is totally disregarded—this is very wrong, very unnatural, and the only thing to be wondered at is, that the amount of injury inflicted is not much greater than we find it. Parents, teachers, philanthropists, everybody, should pay especial attention to this matter, for it is a very important one, involving not only the health of our offspring, but the future destiny of this great republic. Almost every regulation in our schools is faulty;—children are forced to sit still, while nature intended that they should be in constant motion. The child of the savage, following his natural instincts for action becomes a hardy man; the child of the civilized man, being compelled to obey the irksome and unnatural laws of ignorant guardians, dies at an early age, or is made an invalid for life. I have attended hundreds of children whose diseases were the results of improper regulations in their schools. The education of children should be made more a matter of pleasure, than a mere dull, repulsive task, and that it can always be made so, I am well convinced. The safety of a republic rests not only in the mental acquirements of its citizens, but in their physical health and strength; it is the right, it is the duty of a free government to make such laws as will perpetuate its blessings upon posterity without infringing upon individual rights. Therefore, such nations should make it an

imperative requirement, that all their children, both male and female, *must* be physically and mentally educated. This will not interfere with the rights of any adult, for I hold that in a religious, social, and moral sense, no individual has a right to prevent the growth and cultivation of those two great gifts from Deity, the body and the mind. And, again, it is the right of a freeman's child to demand and obtain from his country a thorough cultivation of these two great levers of happiness, virtue, health, power, and freedom, in order that he may enjoy these when he becomes a citizen. No man can be said to enjoy freedom, whose mind and body are in a state of sterility.

Since having written the above, I have met with the following excellent remarks in the Boston Medical and Surgical Journal of Oct. 18th, 1855, from the pen of its editor. The article is headed, "Evil Effects of Studies out of School," and should be read by every parent and teacher. It is as follows:—

"The length of time to be employed in mental application by young persons at school, is a question we are surprised not to see oftener discussed in medical books and journals, since there are few subjects that have a greater bearing on the bodily health, as well as the intellectual advancement of the young. On the one hand, the importance of mental cultivation is denied by no one; the education of the people is the boast of our country, and is of incalculable advantage to a republic in preparing its citizens for the responsible duties of self-government, and in promoting to an indefinite extent the means of happiness of the individual. On the other hand, we must take into account the dangerous effects of over-stimulation of the intellectual powers, and of the absence of a due amount of bodily exercise, at the expense of the physical organization; and this view of the subject, we apprehend, has been too much overlooked by the instructors of youth, in their desire to bestow upon their pupils the advantages of a highly accomplished education. The vast increase, of late years, in the amount and variety of studies taught in our schools, leaves, we fear, too little time for the proper recreation necessary both to body and mind. There are few schools in our city, where the higher branches are taught, which do not impose upon the scholars, in addition to at least six hours' mental labor in the school-room, lessons requiring from one to two hours' hard study at home, which time must, in some cases, be greatly extended by those of inferior powers of acquisition, whose ambition will not permit them to fall behind their more gifted companions. In many instances, we are afraid, this extra work is prolonged into those hours when both mind and body should be repairing the losses of the day by sleep.

"Now, young persons, especially, require both amusement and out-door exercise, and much more of the latter than most of our young friends are able or disposed to indulge in. The bow which is always kept bent, soon loses its elasticity. The youthful mind, by too much application, becomes either heavy and incapable of healthful exertion, or else, by over-stimulation, is rendered visionary, eccentric, and impractical, prone to fanaticism, or even to insanity. Sedentary habits predispose the system to dyspepsia, phthisis,

and a host of other diseases. Over-use of the eyes, especially by lamp-light, and on closely printed books, (often in the crabbed characters of the Greek or German,) when it does not immediately give rise to acute inflammation, often lays the foundation of permanent weakness of sight, and constitutes a source of misery which may last a lifetime.

“The School Committee of this city have wisely prohibited the imposition of lessons out of school hours, in grammar schools. We hope they will, ere long, see the wisdom of introducing the same reform into the higher schools. In our opinion, no lessons should, as a general rule, be learned out of school. Six or seven hours daily, is quite enough time to be spent in application to books, especially by children who are passing through that period, in which the changes taking place in the system render it peculiarly susceptible to evil influences. Nor would a diminution of the time spent in studying, prove a real loss in the end; on the contrary, we believe that children would work with more interest, and make more progress in their studies, if they came to their books with their minds refreshed and bodies invigorated by exercise. Children should study hard, but they should also play hard; and it is just as much our duty to induce them to play as to make them study. The apparent progress made by incessant mental application in early years, is too often compensated in after life by ruined health and disappointed expectations. We have in our mind several cases which we could adduce in support of the position we have here assumed, but, for the present, we forbear.”

CHAPTER X.

Sleep.—Means to promote Sleep.—Beds.—How long to Sleep.—Dreams.—Nightmare.

REST is as proper, both for mind and body, as exercise, from the fact that the mental and physical energies become fatigued and exhausted, after they have been in action for a certain period; and as a restoration of their powers cannot be effected while the muscles or mind are engaged in any efforts, periods of complete muscular and mental repose are absolutely necessary, by which the exhausted organs may be enabled to recruit their energies. Over-action of the powers of the constitution, or, too great an amount of rest, are equally destructive to health and life, and it therefore becomes an important measure to ascertain how the periods of exercise and rest should be regulated in order to the attainment of the greatest degree of health and longevity. The first has been noticed in the preceding chapter.

The various influences of the day, as light, heat, sound, physical and mental exertions, &c., exhaust the vitality, or stimulating powers natural to the system in ordinary health; and if these be continued beyond a certain ex-

tent, without a proper amount of rest, disease will inevitably ensue. And to renew the functions of the mind, recruit the vital powers, resuscitate the jaded constitution, and promote the prolongation of life, the rest or sleep should be uniform, sound, and refreshing. During a sleep of this character, the action of the heart is diminished, the circulation is performed more slowly, the respiration is less hurried, and the heat of the surface of the body is considerably reduced, rendering the person more liable to the unhealthy influence of cold and atmospheric variations, especially when the body is not properly protected by covering; all the organic functions of the system are less active than when awake, hence, among other things, the danger of sleeping immediately after a meal, the food of which is not only imperfectly digested at such time, but acts as an irritant, deranging the action of the nerves of the stomach, and through them, the brain and nervous system. In a perfectly healthy sleep, the mind becomes wholly unconscious of external objects; all its various passions, emotions, thoughts, desires, &c., are hushed up, being in a complete state of torpor—the person does not even dream—and the period occupied in this state of rest, is, as it were, blotted out of existence.

The *proper period for sleep*, is during the night. Among those who live active and temperate lives, we find a slight acceleration of the pulse as night approaches, and a sensation of languor gradually creeps over all the functions of the body, admonishing each person that the energies of his system are fatigued and exhausted, requiring that rest and reparation which can only be found in sleep. As a general rule the earlier hours of the night afford the most profound and the most refreshing sleep; yet it is frequently the case, and more especially among invalids, that the early morning hours prove more beneficial in this respect.

That night is the proper period for sleep, the most conducive to health, is proved, not only from the fact of its being selected from a natural demand, by all nations, whether civilized or savage, but likewise from the fact that those who turn night into day, do it always at the expense of health. They who lie half of the day in bed, and keep awake during the night, for the purpose of study, exercise, &c., no matter how regular their habits may be in other respects, become effeminate and enervated, gradually losing that health and activity of the vital energies which render life of value; but when these hours are passed in riot, gambling, sensuality, intoxication, or other excesses, the effects upon the system are still more destructive; persons thus engaged, in disobedience to the demands of nature, soon lose their natural color, the blooming cheeks are supplanted by a pallid and unhealthy appearance, the eyes lose their sparkling and animating brilliancy and become permanently injured, not only in consequence of the unnatural hours, but likewise, of the artificial light to which they are exposed. The constitution gradually gives way, it becomes more susceptible of disease, and in process of time, the most robust and athletic person is certain to meet with an early decay of the vital powers. During the day, while the whole surface of the earth is refreshed and gladdened by the presence of the sun's rays, a princi-

ple is diffused with them, supposed by some to possess a galvanic or electric power, which dispenses all noxious emanations, which greatly adds to the vitality of the atmosphere, if I may so express it, and which exerts an appreciably favorable influence over all the organs of the animal economy, exciting in them a healthful activity. While, on the contrary, during the night, when the sun's rays are absent, the poisonous matters which had been driven off through the day gradually steal throughout the atmosphere, engendering serious diseases among all who are exposed to them; the *active vitality* of the day is withdrawn with the disappearance of the sun, and the already exhausted system, feeling its absence, becomes languid and courts sleep while surrounding nature is in a state of passiveness. This is in strict accordance with the laws of nature, which are ever in harmony with each other.

That sun-light is absolutely necessary for the preservation of health, has been proven by experience. It has been found that armies who rest by night and march by day, are more healthy, and less liable to disease, than those who pursue the opposite course; that those who, in fashionable life, seek repose in the day, and action of any kind in the night, are almost always certain to find an early grave; or, if not this, life is rendered a state of torment to them from the maladies which their systems have contracted from such perversion of the natural laws. Those who work in mines where the light of day never enters, are invariably subject to a premature decay of the vital powers; all of which tend to establish the fact, that night is the natural and only period for sleep. Very young children, and persons laboring under disease, are the only individuals who may be benefited by short periods of sleep during the day. Many persons allow themselves to sleep during the day, particularly after the dinner meal, which is an exceedingly pernicious practice, being seldom followed by that renewed energy which results from a similar amount of sleep taken at night; on the contrary, those who pursue this improper habit, almost invariably experience disagreeable sensations upon awakening, as, a bad taste in the mouth, nervous irritability, derangement of the mind, with an unpleasant feeling in the head, swollen eye-lids and a degree of pain or irritation in the eyes, unfitness for proper mental exercise, &c. And this is owing to the fact that sleep, being a passive condition of the whole system, including the organs of digestion, the food which has been received in the stomach remains undigested, irritates the nerves of the stomach, and through them a derangement of the whole economy is effected, which frequently occasions serious results. It is on this account that sleep after a hearty meal is so apt to induce apoplexy, in those predisposed to it. A short rest, or state of quietude, say an hour or so, from active mental or physical exertion, is always proper after a hearty meal,—the system undoubtedly demands it, but it should never be permitted to go so far as sleeping; indeed, the disposition to sleep after a meal, is most generally the result of having taken too much food. Those who in past times had their jesters to amuse themselves with for an hour or two after dinner, although they may not have understood the philosophy of the matter, nevertheless, pursued a very sanative course, and it would prove profit-

able, at least as regards health and longevity, were the method still pursued, especially by the nervous, the dyspeptic, and the apoplectic. An agreeable state of the mind favors digestion; while serious thought, disagreeable news, anger, grief, hard study or exercise, sleep, &c., greatly retard it. Dyspepsia and apoplexy will be more readily removed by such a measure, than by all the drugs in Christendom.

The next consideration is, *the means to be employed to promote sleep*. All persons in health will enjoy the proper extent of sleep, if they avoid every measure calculated to derange the harmony of action of the system. Thus, a proper amount of exercise through the day not only contributes to sleep, but likewise renders it refreshing; and these effects are greatly increased if the exercise be taken in the open air. If, however, too great an amount of exercise be taken, and especially toward bedtime, it will generally prevent sleep. Students, sedentary persons, and those who are indolent, are generally more incommoded with the want of sleep, than they who are active and laborious. Individuals whose occupations afford but little or no muscular exertion through the day, and who do not in consequence enjoy the luxury of sound sleep, may, in a great measure, overcome the difficulty, by exercising moderately a short time before going to bed, as, by walking for twenty or thirty minutes in a large room, hall, or in the streets, by gentle dancing, by the use of dumb-bells, and particularly by engaging in some pleasant sport.

When sleep is generally unsound, a favorable effect will result from the application of friction to the body or limbs, continued for ten or fifteen minutes before retiring to bed; a coarse towel, or flesh-brush may be briskly used for this purpose. Frequently, sleep may be obtained among those who have lain in a wakeful and restless condition for some time, by removing the covering to the foot of the bed, so as to air the sheets, the person in the mean time exercising by walking about the room, or by the employment of friction, either of which should be continued until the system feels a glow of warmth, when he may again lie down.

Sleep is prevented by intense study, close meditation, anxiety of mind, &c.; and it is usually the case that those who immoderately devote themselves to mental labors, regardless of the physical system, exhaust their energies, and bring on a premature decay of their constitutions. All uneasiness of mind, anxiety, deep thought, &c., should be banished as much as possible before retiring to rest for the night; and those only will have a sound and refreshing sleep who can thus dissipate or forget the excitements and annoyances of the day.

Sleep will be disturbed and unrefreshing to those who neglect the condition of the alimentary organs at bedtime. Very few persons enjoy uninterrupted sleep who neglect this point. No food should be eaten for at least two hours before bedtime, and then the supper should be very light, avoiding strong infusions of tea or coffee, which alone will frequently prevent sleep, and which are often employed for this purpose by the votaries of fashion and night-intemperance in the way of parties, balls, &c., which are continued not only to late hours at night, but to the early hours of morning.

With many persons, sound and refreshing sleep can never be obtained, except they lie with their heads to the north, and feet to the south, which is supposed to be due to the influence of terrestrial magnetism on exceedingly sensitive persons. Delicate and nervous persons in particular, should ascertain the position which is the most favorable for them to adopt in sleeping, for it will be found that with many it will be almost impossible to sleep with the body lying from west to east. A physician in France has published the opinion that in some instances sleep will be procured by placing the legs of the bedstead on glass blocks, and thus insulating the bed.

Persons who are restless and wakeful during the night, frequently resort to narcotics for the purpose of forcing themselves to sleep; but this is a very reprehensible plan in most cases. An attention to diet, exercise, friction, bathing, the condition of the mind, as well as of the bowels, will, in the majority of instances, overcome the difficulty. And, when this course fails, then, and not till then, should an endeavor be made to procure rest by the use of medicines. Opiates should never be used for this purpose, unless prescribed by a physician; hops, or its pollen, *lupulin*, the extract of lettuce, or an infusion of sculleap, will be found sufficient, in most instances, to induce the desired repose. Often a cold wet bandage applied for ten or fifteen minutes to the head will be followed by sleep, particularly if there be much heat in the head; if the body be warm, the forehead cool, and the pulse slightly accelerated, a few drops of spirits of camphor in a wineglass of water will be sufficient. But among by far the greater number of wakeful persons, exercise and friction, as referred to above, will be found the best soporifics.

The apartment for sleeping should never be on the first or ground-floor, but always above this, either on the second or third floors. The room should be spacious, and, if possible, exposed to the influence of the sun; and during the day, instead of being closed or dwelt in, the windows should be kept open as much as the condition of the weather will allow, for the admission of pure air, and the dissipation of the noxious vapors collected during the night. The windows, however, should be closed during damp seasons, and even in pleasant weather they should never be kept open during the night, unless the person avoids lying in a draught of the night air. Fires should never be kept up during the night in a bed-chamber, except in cases of sickness, dampness, and in malarial districts; they fill the room with more or less smoke, dust, and ashes, interfere with sound refreshing sleep, and if persisted in will eventually relax and debilitate the system, rendering it liable to attacks of disease from the slightest causes, and disposing the person to a constant series of colds, catarrhs, and the like.

More than two persons should never sleep in one bedroom; indeed, as these rooms are usually built, one person will exhale a quantity of carbonic acid gas from the lungs, and other unpleasant vapors from the body during a night, that will render the room very disagreeable for a second person to enter it in the morning before it has been ventilated.

It is not healthy to sleep in a confined room with a diseased person, more especially when in the same bed; and when nurses or others pass a night

with a sick person, they should have a current of air through it, in a manner not to pass over nor expose the patient or themselves to its influence; of course in very cold or damp seasons, and in miasmatic countries, this would be improper.

When an old person sleeps between two young ones, the communication of animal heat increases and supports the vital energies of his system, by which his health may be improved, and his life prolonged. As far as my own observations have gone, I am fully convinced that this increase of vigor and activity is effected at the expense of the health of the young persons thus exposed; and parents cannot be too careful how they permit their children to sleep in the same beds with aged or diseased persons. The same remarks apply to young adults. Old persons should always be well covered during their sleeping hours, and in cold weather their feet should be rested upon a warm stone, or bottles filled with hot water.

Some attention should be paid to the materials forming the beds on which we sleep, not only for the benefit of our sleep, but likewise of our health. The best material for beds is hair; the worst, feathers. Hair mattresses, or mattresses of straw, cotton, corn-shucks, moss, &c., are always superior to feather beds, except, perhaps, for the aged during cold weather, who require the preservation and increase of their heat. The beds for children laboring under rickets, scrofula, or debility, may be advantageously made of the leaves of sweet-fern, sweet-balsam, frostweed, dogwood, ptelea, bittersweet, &c. A feather bed causes one to become warmer than is necessary, produces a tendency to increased perspiration, and a consequent general debility, together with a constant state of irritation; from these causes the system becomes relaxed, and more prone to disease. Feathers readily take up the exhalations which are disengaged from our bodies during the night, and thus form a kind of bath of animal vapors which had been destined to leave the body, but which may re-enter it by means of absorption. An old feather bed should be looked upon as a depot in which all the products of animal exhalation are collected together. While a mattress, which readily admits of the escape of these vapors, has none of the inconveniences of those materials which retain them.

The bedclothes should be clean, changed frequently, and carefully protected from dampness; they should be aired every day, whether the bed be used during the night or not. By pursuing this course, many colds, rheumatisms, consumptions, &c., may be avoided. Persons traveling on steamboats, or lodging at hotels, or in strange rooms, should never retire without first inspecting the beds offered to them, to learn whether they are damp; for it is better to sleep, without damp bedclothing, on a naked mattress, than to run the risk of health and life by neglecting this precaution. Hotels, steamboats, and other public places, which are noted for damp beds, should be avoided by travelers, as much as houses infected with the plague. The covering should be light and cool in warm weather, and in cold seasons it should be just enough to keep the body comfortably warm. The head should not be covered at all. The use of a large num-

ber of heavy bed-clothes as a covering, is extremely injurious to health. Curtains are pernicious; they interfere with the free circulation of air, retaining the gas exhaled from the lungs, and obstructing the flow of the oxygen of the atmospheric air to those who lodge in the bed. A free circulation of air, without any interference, is highly beneficial to all persons.

Another point to be regarded, is the *length of time which should be passed in sleep*. Children may sleep as often and as much as they please, for theirs is peculiarly an age of growth and development, requiring considerable activity of mind and body, the restlessness of each demanding a corresponding degree of repose. Some authors allow from fifteen to twenty hours of sleep for an infant, twelve hours for those from the ages of four to thirteen, ten hours from thirteen to eighteen, and from seven to nine after the age of eighteen. As a general rule, these periods may be safely permitted for the duration of sleep per day, but there will be found many exceptions. Delicate persons will almost always require more sleep than the robust and vigorous, and the invalid more than the possessor of good health. Again, men who are ardently pursuing intellectual studies invariably require more sleep than those who are merely occupied in physical labors; and they frequently destroy health and life by curtailing their hours of repose, that they may have more time to devote to their studies. Exhaustion of the mind requires more time for complete re-invigoration than exhaustion of the body. In the morning, the brain has become quite refreshed and strengthened after a night of sound sleep, and this is the best period of the day for study, say from five or six o'clock until noon; after this time, the balance of the day should be passed in light studies, recreation, &c. Instead of cultivating this habit, most literary and scientific men employ the night hours, when the brain is exhausted and demands rest, for the purposes of study, and by so doing they not only injure their health, but do not accomplish as much in the way of study or reflection, as they would by adopting a different course. "Early to bed and early to rise," with "early hours of the day only for study," will be found highly advantageous to studious persons especially, if they will practice accordingly. The late hours of the day should always be devoted to recreation and amusements.

All persons in health should avoid a second nap in the morning; it is by no means salutary. The better plan is to arise as soon as one has awakened, which will counteract a disposition to indolence and late morning hours. On the contrary, many invalids derive the greatest amount of benefit from a morning nap, and I am not yet convinced that early rising is so applicable to the invalid as to the healthy; I consider that the resuscitation of the exhausted energies of the system in health, and the removal of morbid conditions in the unhealthy, is better effected by sleep than by anything else, and consequently I have found that my patients afflicted with chronic affections, are, as a general rule, more benefited by a short sleep in the morning, than by pursuing the course more commonly advised, of rising very early. Every person in health should ascertain, by experi-

ment, the amount of sleep which is necessary to render him comfortable and vigorous throughout the day, and regulate his sleeping hours in accordance therewith. Six or seven hours is sufficient for the many; nine hours may be required by the few. Too little sleep is as injurious to the system as too much.

The following rules will be found serviceable: Sound, sweet, and refreshing sleep can be obtained by a calmness of mind, without excitement or anxiety, with regularity of the digestive organs, and moderate exercise. Too many persons sleeping in one room, by breathing a confined and vitiated atmosphere, will surely become diseased. All bed-chambers should be thoroughly ventilated and kept dry. All beds and bed-clothing should be aired daily, and no dampness on them be permitted to remain. A sleep or doze immediately before retiring to bed, will be very apt to interfere with a subsequent sound sleep. Never read in bed; it is injurious to the eyes, straining them severely, and interfering with sleep, and if persisted in, it will destroy the health. Fat people should never sleep during the day, and as little as possible during the night, not to exceed seven hours. The early hours of night are in all cases, the best for resting; late night hours are never otherwise than detrimental to health. Never sleep on a feather bed. A little gentle exercise will do more toward removing a sensation of weariness in the morning, than a second sleep.

Dreams are an indication of some derangement of the equilibrium of the system. A perfectly healthy man never dreams during his hours of sleep, but in proportion as he departs from a healthy standard, will his sleep be attended by dreams. Thus, if for a few evenings he should eat hearty suppers immediately before retiring, in consequence of the derangement thereby caused he will dream, and in proportion as his dreams are pleasant or unpleasant, will he more or less speedily be relieved from the evil effects of his conduct upon his health. I consider dreaming as a kind of somnambulism, the same as that produced by the passes of the mesmerizer, and which is the result of a certain principle influencing the brain when in a passive condition; this principle may be termed the *vital principle*, *nervaura*, or *motive power* of organized beings.

Most all persons have troublesome dreams for some time previous to a fever, or other acute disease; and in chronic cases an individual invariably enjoys himself much better after an agreeable dream, and almost always feels worse after one which has been unpleasant. I conceive the cause to be this: the motive power acts more powerfully during sleep to restore harmony to the system; therefore, whenever a person dreams he is in what the mesmerizers would call a complete, or incomplete somnambulist crisis, if we examine him, we find the same phenomena exhibited as in mesmerized somnambulists, the hands and feet cold, and the head hot. Yet he may be sensible to feeling, noises, the presence of other persons, &c., because the motive power in action is derived from his own nature, and not from another's; and from the same cause his dreams may be incongruous and imperfect, inasmuch as he is not under the guidance of an active,

well-directed will, but under his own, which is passive; hence, his dreams will generally partake of a confused mixture of the ideas and species of excitement which had been previously acting upon his brain while in the waking state.

If a person dreaming is in a perfect state of natural somnambulism, and walks or talks in his sleep, any person may obtain what mesmerizers call the communication with him, and thenceforth stop his sleep-walking and sleep-talking habits, which is a much better course than to attempt a cure by means of some sudden shock, a plan which has frequently resulted to the disadvantage of the somnambulist.

Dreams may generally be prevented by a proper attention to the rules of hygiene, as moderate exercise taken daily, attention to the condition of the skin and of the bowels, avoiding late and heavy suppers, and in some cases dispensing with supper altogether, and keeping the mind free as much as possible from excessive care, discontent, anxiety or excitement.

The *nightmare* is a condition of the system similar to the preceding, and most commonly arises from an imperfect action of the digestive organs, flatulence, and very frequently from heavy suppers. It differs from ordinary dreaming, by having in connexion with it a diminished action of the nervous system as well as of the circulation of the blood, producing difficult breathing, great weight or pressure, or an inability to move, which seems to require powerful efforts to overcome, and which conditions are frequently so excessive as no doubt to cause sudden deaths, even among persons apparently in the enjoyment of perfect health. In many persons, nightmare will occur whenever they sleep lying on their backs. Those who are subject to nightmare should never eat suppers, should take more or less exercise daily, should keep the bowels regular, and should not lie on their backs while sleeping; they should likewise sleep with their heads and shoulders slightly elevated. When acidity of the stomach and flatulence cause nightmare, an alkali with some aromatic may be taken at bedtime; as for instance, a wineglassful of solution of super-carbonate of soda, or of common saleratus, to which twenty or thirty drops of essence of peppermint may be added.

CHAPTER XI.

Cleanliness.—The Skin.—Cold Bath.—Bathing.—Douche.—Shower Bath.—Sea Bathing.—Warm Bath.—Soap.—Disinfectants.

Cleanliness is a very important measure for the preservation of health; the sympathetic relations which exist between the skin and the internal organs, as the lungs, liver, stomach, kidneys, &c., are much greater than between those of any other organs of the body; and, as a consequence,

whenever the functions of the skin are deranged or interfered with, whether from exposures to sudden changes of temperature, or from an accumulation of filth, the internal organs suffer in proportion. The skin, besides affording an external covering to the body, possesses a nervous system which renders it sensible to external impressions, which are transmitted from it to the brain, through the agency of the nerves; it is likewise endowed with a system of bloodvessels which play an important part in the animal economy.

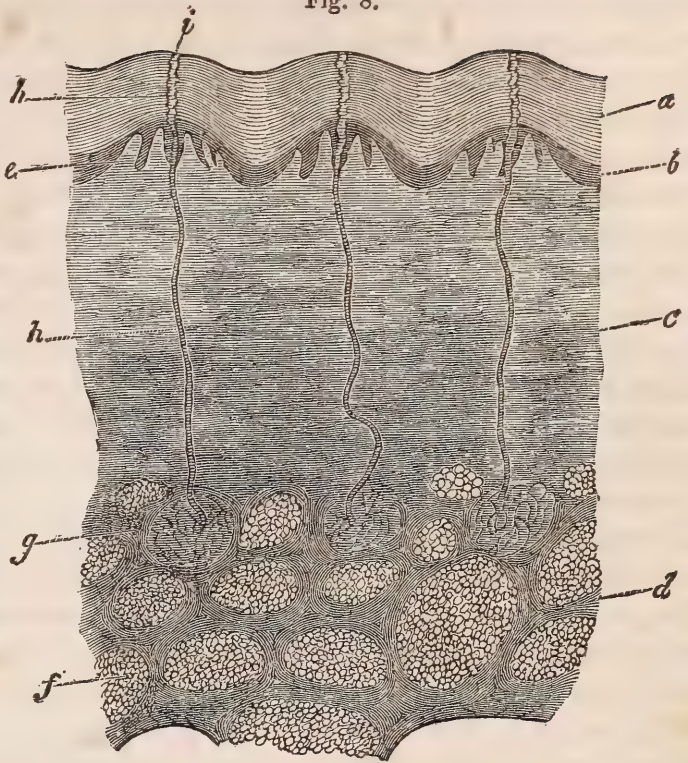
Beside these, there is contained within the skin numerous minute tubes, ascertained by means of the microscope to be spirally and irregularly coiled upon themselves, each of which is in close proximity with a capillary bloodvessel, and which separates the perspiration from the blood in the capillaries. These perspiratory organs discharge the perspiration externally through a minute mouth or pore, which under ordinary circumstances passes off in the form of vapor, being termed "insensible perspiration;" but when the system is over-heated by exercise, increased heat, or mental excitement, the perspiration is thrown off in such large quantity, as to form a watery fluid upon the surface of the body, which is called the "sensible perspiration." That the reader may form some idea of the importance of these perspiratory organs, I will give an extract from Mr. E. Wilson on this subject, who says:—

"To arrive at something like an estimate of the value of the perspiratory system in relation to the rest of the organism, I counted the perspiratory pores on the palm of the hand, and found 3,528 in a square inch. Now each of these pores being the aperture of a little tube about a quarter of an inch long, it follows, that in a square inch of skin on the palm of the hand, there exists a length of tube equal to 882 inches, or $73\frac{1}{2}$ feet. Surely such an amount of *drainage* as seventy-three feet in every square inch of skin, assuming this to be the average of the whole body, is something wonderful; and the thought naturally intrudes itself, what if this *drainage* were obstructed,—could we need a stronger argument for enforcing the necessity of attention to the skin? On the pulps of the fingers, where the ridges of the sensitive layer of the true skin are somewhat finer than in the palm of the hand, the number of pores on a square inch a little exceeded that of the palm; and on the heel, where the ridges are coarser, the number of pores on the square inch was 2,268, and the length of tube 567 inches, or 47 feet. To obtain an estimate of the length of tube of the perspiratory system of the whole surface of the body, I think that 2800 might be taken as a fair average of the number of pores in the square inch, and 700, consequently, of the number of inches in length. Now, the number of square inches of surface in a man of ordinary height and bulk is 2,500; the number of pores, therefore, is 7,000,000, and the number of inches of perspiratory tube, 1,750,080; that is, 145,833 feet, or 48,600 yards, or nearly twenty-eight miles."

Among the uses of perspiration, one is that of reducing or graduating the heat of our bodies, for it is a well-known fact that aqueous vapor con-

tains a large amount of latent heat. In cold regions, these perspiratory pores contract more and more closely, and give off but a small amount of perspiratory vapor, thus retaining a sufficient heat within the body to enable it to endure the cold; while in hot climates, they are more and more opened, and discharge not only an invisible vapor, but a watery fluid, which regulates the temperature of the body, so that it may endure the degree of heat common to its residing place.

Fig. 8.



Skin magnified twenty diameters. *g.* sweat glands; *h.* sweat canals; *i.* sweat pores; *f.* masses of fat.

By this system of glands, man is enabled to adapt himself to all climates, from the frigid to the torrid zone. Yet a hot, *moist* air is more fatal to animal life than a hot, dry one, because when the atmosphere is already loaded with moisture, the evaporation of the insensible perspiration is prevented. Consequently, we find that in places where such weather prevails, as in the South, the inhabitants experience feelings of languor and oppression during damp seasons, and there is more sickness among them than in places where the air, although hot, is dry, permitting a free evaporation from the body, and the rapid dissipation of the poisonous vapors exhaled. Again, the intense heat of the body in acute fevers, is at once diminished by a free perspiration.

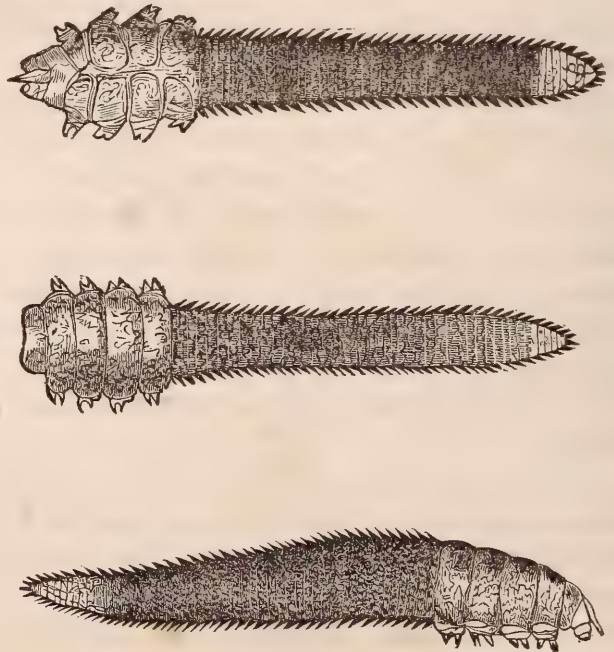
As long as the proper amount of perspiration is discharged, our persons experience feelings of health and comfort; but when the action of the sweat-glands are interfered with, or the perspiration obstructed in its passage through the tubes, as by exposure to sudden reduction of temperature, a cold, damp wind, or sitting in a draught while the body is excited and perspiring freely, &c., we feel a corresponding degree of discomfort, a gradual derangement of the functions of all the internal organs, which sensations continue to increase if we do not at once remove the constricted, or congested condition of the perspiratory vessels, and thus relieve the suffering organs.

Besides these organs, the skin is also provided with sebaceous or oil-glands, which although resembling the perspiratory glands in their organization, are more complex, and are not so uniformly disseminated over the

surface, being found over the nose, certain parts of the face, ear, &c., and wherever hair is present, while on the palms of the hands and soles of the feet they are absent. These glands secrete an oily matter which protects the skin from the influence of fluids with which it is apt to be bathed, also from an undue action of the sun and atmospheric changes, keeping the hair and its roots in a soft and pliable condition. But when from any cause the functions of the skin are sluggishly performed, the fatty matter instead of being discharged upon the skin, is retained in the oil-duct, where it concretes into a matter of the consistence of cheese; the oil-tube becomes gradually enlarged by the fresh deposition of oil globules, and at its mouth will be eventually observed a black point, which those on whom it forms are in the habit of squeezing out, supposing the mass of fatty matter, forced out, to be a worm. Although not a worm, the microscope has discovered to us that it contains animalcules, of elongated form, about the fortieth of an inch to the one hundred and thirtieth in length, having an obtuse head, which is directed inward. They are met with in groups of from two to twenty, increasing with the inactive state of the skin, and diminishing as it arrives at a normal activity.

Perspiration is generally mixed with the above named oily, and other matters; it has an acid smell and reaction, which is owing to the presence of lactic or acetic acid, and contains about from one-half to one and a half per cent. of solid matter, consisting principally of animal matter with some saline substances discharged from the serum or watery portion of the blood. When these perspiratory matters are permitted to remain in contact with the skin for a length of time, they rapidly decompose, lessen the activity of the skin, frequently causing

Fig. 9.



Steatozoon Folliculorum, seen upon its abdomen, back and side.

skin diseases, and contaminate the surrounding atmosphere, which when confined, will occasion fevers and other maladies, often of a dangerous character; and, undoubtedly, many lingering disorders are thus occasioned, especially of the lungs and kidneys. The greater the obstruction to the

exhalent action of the skin, the greater the liability to serious disease, and when it is checked, the blood becomes imperfectly aërated, the temperature of the body is rapidly reduced, and death soon ensues.

From the above statements will be seen the vast importance of keeping the skin clean and healthy, in order that it may properly perform its functions. A person with a clean, healthy skin preserves a greater amount of health, of good feeling, of pleasant disposition, of proper nervous action, than when the skin is neglected,—he feels sound all over, while a filthy or diseased skin is a source of constant annoyance to its possessor.

But while we attend to the condition of the skin, we must not neglect other matters of cleanliness which are fully as important to the preservation of health. All species of filth and stagnant water should be removed from our dwellings, out-houses, &c.; they should not be allowed to accumulate, otherwise their decomposition may contaminate the air with noxious effluvia, and become a source of malignant disease, not only to an individual family, but to a whole community.

Personal cleanliness requires a frequent changing of dress, and daily ablutions of the whole body with water. If the dress be not often changed, the effete matters of the body which it contains, by coming in contact with the skin, will eventually occasion some skin disease. But to determine the blood to the surface, to purify, invigorate, and duly oxygenate the skin, and thereby add to the activity of all the organs of the system, there is nothing superior to a rapid washing of the body and limbs daily with water, using a moderately coarse towel in drying, with brisk friction; and every person should be trained, at as early a period as possible, to accustom himself to a weekly or semi-weekly cold bath, which will tend to remove skin diseases, dispose to health and longevity, and enable him to overcome influences, which with persons less fortified might be productive of serious consequences. I consider a regular bathing of the whole body *daily*, commencing in childhood, as calling forth too much action of the skin, the evil consequences of which, though not appreciated in the forepart of life, will be certainly felt as age advances.

When daily bathing is resorted to, sponging the body is the best mode of cleansing it. The sponge selected for this purpose should be rather coarse, slightly flat, having its corners rounded, and should be sufficiently large to hold about a pint and a half or two pints of water. It should be thoroughly, but quickly passed over the body and limbs, immediately after which, the surface must be dried with a coarse towel, applying it with a moderate degree of friction—too much or too severe friction is improper. The coarseness and roughness of the towel, as well as the degree of friction, must be proportioned to the sensitiveness of the skin; for it will be found that some persons can endure a coarser towel and more friction than others. After having produced a pleasurable glow by the friction, then complete the dryness of the body by gently passing over it another towel of soft, lax texture, possessing strong powers of absorption. Many persons contract severe and sometimes fatal colds, by not being aware that

when the surface of the body is wet and exposed to the air, the evaporation which takes place causes a chilling sensation, together with a derangement of the functions of the sweat-glands; on this account the body should be dried as speedily as possible.

The drying having been thoroughly effected, and the individual having covered his body, or dressed himself, so as to prevent the influence of the atmosphere upon the surface until reaction comes on, he should dry the sponge as much as possible, by squeezing out the water, which will prevent it from rotting, and then place it in a situation where any water retained in it may ooze out, as, for instance, hanging it on a nail, or resting it on a frame made of three or four small brass rods, soldered to a strip of tin at each of their extremities, which may be laid across the ordinary washing basin. The whole time consumed in this bathing and drying should not exceed fifteen minutes; some readily accomplish it in half that time. In order to prevent the floor or carpet from becoming wet, the individual should stand in a sufficiently large tin pan, having its margin raised two or three inches; or, a large india-rubber cloth may be spread upon the floor, and a piece of old carpet placed over this for the person to stand upon.

The *temperature* of the water used is a matter of considerable importance, for all persons cannot equally bear the same degree of cold; and that temperature which would prove quite pleasant to one, would chill and depress the system of another. The *cold bath*, in whatever manner it may be employed, is a powerful sedative; its depressing influences being proportioned to the strength, debility, or weariness of the person submitted to its action. The beneficial results produced by its use, depend upon the reactive powers of the system, after the influence of the depressing shock imparted to it has passed off. Hence, much care must be had in the application of cold water to the surface, that its temperature be not so great as to prevent the subsequent healthy reaction and agreeable glow. No doubt, many persons have injured themselves by cold bathing, from a popular but very erroneous view, that it possesses direct tonic and invigorating powers; and many young children, invalids, and weakly persons, have been made to suffer severely from an application of this mistaken idea. The temperature of the water used in bathing should never be so depressing in its results, but that reaction may speedily take place. And when this point is rigidly adhered to, a bath adapted to the condition of the system, taken once or twice a week, will be found serviceable in breaking up the tendency to disease in invalids suffering with obstinate laryngeal or bronchial affections of the throat, dyspeptic symptoms, rheumatism, chronic inflammatory conditions of various parts, &c.

Another popular but erroneous opinion is, that the cold bath should not be taken while the system is somewhat excited or heated. But the truth is, that the most favorable time for taking a cold bath is immediately after gentle exercise, when the body, without being fatigued or exhausted, is in a moderate state of excitement or increased warmth; and all the evils

resulting from cold bathing while the body is in a heated condition from exercise, have been owing to the fact, that with the increased heat there has been an accompanying exhaustion and weakness of the system, or a too copious perspiration.

Bathing by immersing the whole body in water is a very excellent plan, but certain rules are necessary to be observed in order to prevent any mischievous effects. 1st. The water should be of a temperature adapted to the resisting power of the person; should a chilly sensation be experienced a few minutes after immersion, the water is too cold,—the proper temperature will occasion a refreshing sensation, with a slight glow of heat. 2nd. Moderate exercise should be taken shortly previous to plunging in the water, but not sufficient to fatigue or cause copious perspiration. 3d. The clothing should not be removed from the body, until the person is ready to immerse himself; to do otherwise, might cool the body too much before the bath is taken. 4th. The bather should remain in the water until the bathing is finished; it is exceedingly improper to leave the water occasionally and again plunge in, as a chill followed by serious consequences may be the result. 5th. The person should not remain too long in the water, or the reaction of the system will be prevented. As a general rule, five minutes is a sufficient length of time to be in the water, and after emerging from it, a coarse towel should be briskly applied to the whole body, as remarked heretofore. 6th. The body should be well-dried and rubbed after the bathing, and then the clothing should be immediately put on, lest the surface experience a chill. 7th. Should reaction be slow in manifesting itself, a short walk may be taken, or a cup of warm tea or coffee, or even a glass of wine. Bathing by immersion is frequently practiced by the healthy and robust for pleasure, for which almost any time of day may be selected, except immediately after a hearty meal, or while the digestive organs are actively employed in disposing of the contents of the stomach.

Cold bathing, in consequence of its sedative influence, by which the action of the heart and arteries is reduced, is very useful in all diseases attended with increased heat of the surface and accelerated circulation, as in all those fevers in which the surface is hot and dry, in various inflammatory affections, in active hemorrhages, sprains, bruises, &c.

When cold or warm water is poured in a stream upon any part of the body, it is called a *douche*, and is frequently employed with advantage in affections of the head, apoplexy, chronic difficulties of the joints and chronic external inflammations. When the stream of water is introduced into the vagina or rectum, it often proves decidedly beneficial in chronic diseases of the uterus, leucorrhea, constipation, piles, &c. Pregnant females, however, should be careful not to use cold vaginal douches, as they are apt to occasion abortions.

The *shower bath* is another form by which cold or warm water may be applied to the body; the water rapidly descends upon the person in small streams, and completely drenches him, imparting a powerful shock to the

system. The effects produced by a cold shower bath upon many persons of strong constitution, as well as upon the delicate and those of extreme nervous sensibility, are so severe and disagreeable, that its application under ordinary circumstances would be very improper. I believe that the sudden application of cold water to the system, continued daily, or frequently repeated, is very seldom beneficial, and is more frequently a cause of disease than is supposed. It is very apt to occasion a subsequent depression, languor, headache, and in the plethoric, apoplexy. It should not be used when disease of some internal organ exists. A shower bath should be so made that the water will descend rapidly, and be soon discharged; and immediately after the drenching, the person should, as in previous instances, dry himself with friction. A tepid shower bath is preferable to any other, and as a means of preserving health and comfort, should be in common use, that is, two or three times a week in warm seasons, and not so often in cold.

Bathing in *sea water*, or the water of salt rivers, differs from ordinary cold bathing, only in consequence of the stimulus produced upon the surface of the body by the saline particles of the water; and hence, may be adopted by many persons whose delicacy of frame would not admit the use of the cold bath. The remarks, heretofore made in reference to the cold bath by immersion, will apply to bathing in the sea or in salt water. It should not be attempted except before meals and while the system is warm; if the skin be cool or freely perspiring, or if the body be exhausted by exercise, staying up late at night, or intemperance, sea bathing, the same as ordinary cold bathing, will prove decidedly injurious.

Sea bathing is frequently useful in scrofulous affections, chronic affections of the liver, spleen, and stomach, many chronic nervous disorders, some kinds of debility, &c. It should not be used when the skin is diseased, and is rather dangerous in internal inflammations, in consumptive persons, and in bleeding from the lungs.

The *warm bath*, not to exceed 95° Fahrenheit, is preferable for general use to either the hot or cold bath, both for the purpose of personal cleanliness and for invigorating and improving the functions of the skin. Indeed, notwithstanding what may have been said to the contrary by some ultra hygienists, there are numerous individuals with whom warm bathing is positively beneficial, while cold bathing is injurious. It is erroneously supposed by many that warm bathing, more especially where the person remains in the water for some time, weakens and relaxes the body, diminishing its energies and tending to produce disease; but the contrary is the case. Thus we find it to occasion an agreeable, refreshing sensation, to exhilarate the spirits, to increase the strength, to soften the skin and thereby render the circulation of blood in the capillary vessels more free and easy, and also to more completely remove all impurities from the surface of the body. A warm bath calms the nervous system, invigorates the stomach, bowels, and internal organs generally, regulates and equalizes the capillary circulation, reduces any increased action of the heart and arteries, and is

admirably adapted to young children and infants, preventing the skin from becoming diseased, the digestive apparatus from becoming deranged, and favoring the growth and amplification of their various organs. The Eastern nations employ the warm bath, not only as a means of gratification and delightful enjoyment, but also as a certain mode of renovating and strengthening the system when depressed by any kind of fatiguing exercise.

The warm bath will be found more especially suitable for nervous and delicate persons, for children, for the aged, for those laboring under feebleness of the vital powers, or in whom the functions of the skin are somewhat torpid, as manifested by paleness of the surface and decreased temperature, with cold feet and hands, and likewise for those who have been exposed to cold and wet, or who are fatigued by labor, exercise, or traveling. It should be used when the stomach is not engaged in the digestion of food; the best time is about two hours before dinner, and, when immersion is adopted, the time one should remain in the water must vary according to its influences upon the system, from fifteen minutes to half an hour, seldom longer than this. Some persons suppose that they are more liable to take cold after a warm bath, and must therefore add to their clothing, or use some stimulating drinks to protect themselves from this liability; either of these are unnecessary, as it has been satisfactorily ascertained by experience that such an idea is an erroneous one.

As the warm bath lessens the frequency of the pulse, improves respiration, causing it to be performed with less rapidity and more freedom, tranquilizes the nervous system, and equalizes the circulation, causing a determination to the surface, it has been found very beneficial, in cases where there is a morbid heat of the body; in eruptive fevers, where the eruption does not readily come out, or where, from cold, or otherwise, it has receded; in catarrh; rheumatism; colds; in skin diseases; in febrile disturbance from teething, or deranged bowels; and as a relaxing agent in cases of suppression of urine; spasmodic diseases of the bowels; convulsions of children; rupture; gravel, &c.

Although, as a general rule, bathing with pure water is necessary for personal cleanliness, yet this cannot be effectually realized without an occasional use of *soap*. It was stated in a previous paragraph that an oily matter was thrown out by the sebaceous glands of the skin upon the surface, which matter, of course, will not unite with water. When this fatty substance is discharged in large quantities, the skin presents a soiled and greasy appearance; when it is scanty, or insufficient, the skin is dry, rough and squamous. If it be allowed to remain upon the surface, it interferes with the functions of the skin, giving rise to itching, cutaneous diseases, and even to affections of the internal organs, and also occasions an unpleasant odor to emanate from the person. It also causes particles of dust to adhere to the skin, rendering this very unclean in a short time.

This oily deposit, which is constantly increasing, must be removed from time to time, for comfort as well as health; and there is no common substance in use so well adapted for its removal as soap. Soap is a bland com-

pound, which should possess no irritating properties, and is made by the union of an oil or fat with an excess of caustic alkali; and it is the combination of this excess with the fatty matter upon the skin which renders soap so cleansing. Some persons do not require the use of soap as frequently as others, depending, however, upon their occupations; whether these are very dusty, and whether they give rise to much perspiration. All persons should wash the hands and arms daily with soap and water; the face, in all instances, should have soap and water applied to it once a week, and in cases of hard-working persons, or those exposed to dust, soot, or other foreign substances, it should be used daily. Where the person is so exposed that dust, dirt, &c., rapidly accumulates upon the face, neck, and arms, as is the case with many mechanics, these parts should be washed with soap and water, at least as often as before each meal, and previous to going to bed. All persons should apply soap and water to their bodies throughout, as often as twice a week in the summer season, and once a week in winter.

There are many persons who, although they bathe frequently in water, seldom or never use soap for the purpose of washing the body, and this is especially the case in some sections of country, among the farmers, where the only soap to be had is a strongly alkaline soft soap, prepared for washing clothes, which would be highly injurious to the skin if used daily. And the tendency to obstinate skin diseases, and malignant fevers, &c., among this class of persons, is, in a great measure, owing to their neglect of soap, by which the skin becomes sluggish in its action, and its functions very much impaired. Country people, and especially those who labor daily, cannot be too attentive to the condition of their skin—they should procure good soap, and use it frequently.

Dr. J. Bullar, in speaking of the treatment of chronic diseases of the skin, says:—"Indeed, to prevent the return of skin diseases which have been of long standing, it is of primary importance that the whole surface of the body should be washed daily with soap and water; for, as eruptions are often the means which nature sets up for relieving a faulty state of the system through the skin, it is rational to suppose that a free and perspirable condition of that extensive surface will assist nature in removing her waste matter, and thus will prevent the necessity of this scaly, or papular, or vesicular action. What the older practitioners attempted by means of issues, may be more naturally effected by the daily use of soap and water to the whole cutaneous surface. In one case, this practice alone, steadily persevered in for several months, and continued as a habit, permanently cured *psoriasis palmaria* of more than twenty years' duration. Washing the whole surface daily with soap and water will be found to be a very serviceable recommendation, not as a mere matter of cleanliness, but as one of the directions for the general treatment of many chronic diseases, and for the preserving of health in advancing life. Its effect is very different to that of merely washing the body with cold water, or using shower baths, or bathing followed by dry friction. It does not give the same shock as cold water alone; and it is thus much more easily borne by the delicate, who find that the reaction after cold

sponging is exhausting. It more effectually removes the waste epidermis than flesh-brushes or hair gloves; and suits those whose delicate skins are often irritated into eruptions by these rough appliances. For those who are very subject to colds, and are yet too delicate to bear cold sponging, the addition of soap, by its stimulating property, acts as a tonic to the skin, and thus guards it against the effects of sudden changes of temperature, beside aiding in getting rid of the waste and superfluous matters which often require the actions which constitute a cold, for their discharge from the overloaded system. The yellow soap, from the resin it contains, is an excellent stimulant as well as detergent; and a better still, in many cases, is a soap containing a small quantity of Barbadoes tar, called Hendrie's petroline soap, the daily use of which is peculiarly serviceable in keeping up a smooth and perspirable state of the skin when it is naturally dry, and especially in declining life, when the loss of muscular power prevents exercise carried to perspiration; for, as man is organized to earn his bread by the sweat of his brow, if he cannot do this, he must use some artificial means to produce the same state of his perspiring organs, or he will suffer. A physician, distinguished in his day in a neighboring county, who now, though verging on ninety, retains a freshness and vigor of intellect, as well as a sound condition of health, which enable him to enjoy his existence physically and socially, and to devote a portion of each day to the cultivation of science, informed me that he attributed much of his health and activity to this daily soaping of his skin, which he had persevered in since he was a very young man. And the elderly, who usually have much spare time at their disposal, will find that the employment of a portion of it daily in this way will repay them for their pains. In the management of the disorders of the general health which so often attend the cessation of menstruation, this practice is, for obvious reasons, to be recommended."

Common brown or yellow soap, when properly made, is very useful for the purposes above named; but, unfortunately, it is very frequently so carelessly or improperly prepared, containing too much alkali, or rosin, as to be entirely unfit for application to the skin, which it irritates, and causes to become harsh, and covered with pimples. The best soap is the white Windsor, which is a compound of soda and olive oil, and next to this, the ordinary variegated Castile soap; but care should be had to obtain a pure article, as these soaps are frequently counterfeited by unprincipled individuals. The transparent washballs manufactured in this country by Taylor, and also by Huel, will be found very unirritating, and useful as an application to the skin for purposes of cleanliness. Highly perfumed soaps should never be used, for the essential oils to which the odor is almost always owing, are most generally of an irritating character, even when used in small quantities.

The skin of many persons is apt to chap, especially in the winter season; this may always be prevented by washing it daily, with soap-water, and fine sea-sand. These may be used to the *hands* daily, both in warm and cold weather; they will not injure the skin, but on the contrary will render it very clean, smooth, soft and velvety, removing all dirt, roughness, and chaps.

When used to the body, the daily use of fine sand is objectionable; indeed, I do not think it is at all required, except for those portions of the surface which are constantly exposed to the atmosphere, more especially the hands. Indian meal may be used as a substitute for the sand, but I do not think it is so effectual, except when the skin is very tender and sensitive, in which cases it should be used in preference. The sand soaps and washing powders, so extensively advertised, are, from the pumice-stone, coarse sand, and other foreign, rough and irritating particles contained in them, rather injurious to the skin, and should be avoided; but if the soap contains only fine sea-sand as the mechanical agent, it cannot be in the least objectionable as a soap for the hands. I have used soap and fine sand to my hands, almost daily, for the last twenty-five years, and have found it rather advantageous than otherwise.

The best cosmetic is proper bathing with soap and clean water; yet, notwithstanding this, there are many persons, apparently having good sense, who use various manufactured washes, powders, perfumes, &c., under a mistaken notion, that they will beautify the skin. These preparations usually contain corrosive sublimate, oil of bitter almonds, sulphur, white lead, bismuth, sugar of lead, or other harmful agents, and instead of improving the skin, they invariably injure it. If we have an opportunity of examining the faces of those ladies who use cosmetics, paints, &c., immediately after they have been washed, we will almost invariably find the skin rough, coarse, and sallow; and those who once ruin their skins by these agents, are afterwards compelled to employ them, to hide the deformity effected by their use. "The brilliancy of the complexion, and the beauty and delicacy of the skin, can in no way be so well preserved as when frequent ablutions with warm water are resorted to," with the occasional use of good white Windsor soap; this, aided by temperance and regularity in all things, moderate exercise, and a calm mind, will have a greater tendency to beautify the skin than any thing else.

I have remarked in a previous part of this chapter, that as a general rule, bathing of the whole person should be accomplished once or twice a week. Yet it must be borne in mind that this depends considerably upon the health, habits, and occupation of each person. With many, too frequent bathings will be found decidedly injurious; if the organs of the skin be over-stimulated, so that it excretes too much, and this course be pursued daily, the body will be gradually weakened, from the undue loss constantly taking place. No specific rule, can, therefore, be given in relation to the frequency of bathing for purposes of health and cleanliness; this must be determined by common sense and attending circumstances. It should not be used intemperately by any. Probably washing the whole body twice a week during warm weather, and once a week during cold, will, in most cases, be sufficient for health, comfort, and cleanliness, and will be found preferable to immersion.

During sickness, the most rigid attention to cleanliness should be observed; the surface of the patient, should, when not contra-indicated, be bathed daily with a weak alkaline ley, made warm, and to which, some alco-

hol or whiskey may be added, to more readily arouse reaction; the clothes, as well as the bedclothing should be frequently changed, every thing offensive must be immediately removed, the room must be kept clean and quiet, and should be ventilated daily, and in times of epidemics or infectious diseases, the atmosphere may be purified by the following measure:—In a large dish or plate, place half a pound of chloride of lime, so as to expose as large a surface as possible to the action of the air, mix this with two gallons of water, and allow it to stand in one corner of the sick room. The vapor of chlorine which is emitted, sometimes excites coughing in those unaccustomed to breathe it, but this irritation soon abates. The chloride of soda may be used in a similar manner, as a substitute for the lime. If one dish cannot be obtained to hold this amount, it may be divided among several, and placed in different parts of the room. If a piece of coarse calico be placed in the bottom of the vessel containing either of these chlorinated solutions, the chlorine gas will be more quickly developed. Foul, putrid ulcers, and all places from which unpleasant odors emanate, should be washed or sprinkled with one or either of these preparations. Another method is to expose a solution of the chloride of lime to the action of the air, in a sick room; it speedily removes the most offensive odors, and promptly arrests contagion. The nitrous fumigation has been used with advantage in seasons of malignant and infectious diseases; it is made by placing two ounces of nitrate of potash, (saltpetre) in a bowl containing half a pint of hot water; when it is dissolved, gradually pour two ounces of sulphuric acid upon it, and the gas will be at once set free.

In insane hospitals and other establishments, where the floors are wet and dirty with the excretions from patients, there is a constant exhalation of ammoniacal vapor, and neither scrubbing nor scalding, will produce any permanent removal of it. In such cases, if a solution of sulphuric acid, one fluidounce, added to twenty-four fluidounces of water, be poured over the floor, and allowed to remain for twenty-four hours, the volatile ammonia will be converted into a white film of sulphate of ammonia, which may be removed by washing, and will leave the room sweet.

CHAPTER XII.

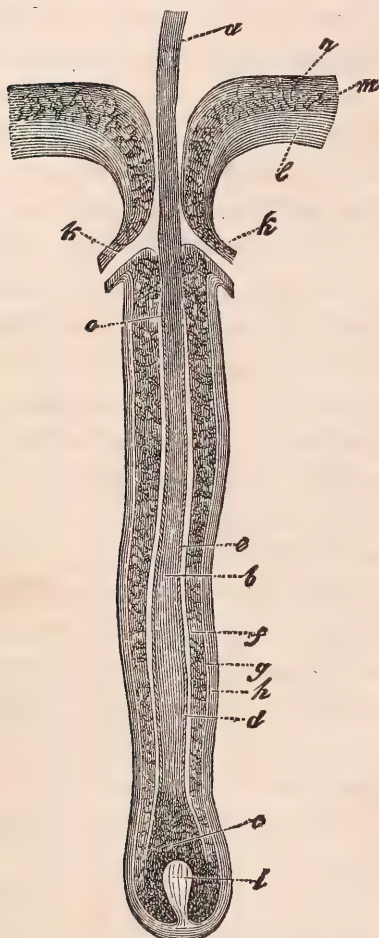
Hair.—Baldness.—Feet.—Nails.—Eyes.—Light, &c.

IN connection with the subject of cleanliness, a few remarks upon attentions to the hair, feet, and nails, may be serviceable to the reader. The attentions necessary for sound and clean teeth and gums, have already been referred to in Chapter II.

In the fatty cushion beneath the true skin, or in the true skin itself, are small glands, consisting of sacs having eminences or papillæ at their bottoms, and which are well supplied with nerves and capillary bloodvessels, from

which last the hair is formed. The hair, in its advance toward the surface, passes through a tube or duct, somewhat similar to the perspiratory and oil-gland ducts, and into which one, and sometimes two ducts of the oil-glands open, for the purpose of oiling and softening the hair. With the exception of the palms of the hands and soles of the feet, the whole surface of the human body is covered with hair, in some places being short, fine, and scanty, and in others, long, coarse, strong, and of luxuriant growth.

Fig. 10.



Hair magnified fifty diameters. *a*, hair-shaft; *b*, root of the hair; *c*, hair-bulb; *d*, papilla of the hair; *e*, excretory ducts of the sebaceous glands; *f*, end of the inner root sheath.

Upon examining the hair with the microscope, its center is found to be less dense than its other parts, and to contain a number of cells lying loosely together and forming a kind of pith; immediately external to this central pith are found fibers, formed by the splitting of cells, and which impart strength and density to the hair; externally to these is another layer of dried and flattened cells, forming scales or plates overlaying each other, whose free edges are directed toward the end of the hair; so that it resembles somewhat the twig of a tree, having a central pith, a fibrous or woody formation for strength, and scales or bark as a covering on the outside. The color of the hair is owing entirely to the coloring matter contained in its cells.—*W. E. Coale.*

Beside the perspiratory and sebaceous matters thrown out upon the skin, there is also a constant scaling off of the walls lining the hair ducts, which accumulates around the hair bulbs, forming what is commonly known by the name of "dandruff," and the absence of which, or its redundancy, is owing to disease, or some unhealthy condition of the ducts.

The hair is not a ready conductor of caloric, and that which grows upon the head, very probably tends to preserve an equalization of the heat of the brain. The eyebrows prevent the perspiration of the forehead from flowing

into the eyes, by conducting it to each side of them. The hair within the ears and nostrils, protects these openings from dust, insects, &c.; that on the upper lip, guards the mouth from the perspiration of the face, and also aids in fitting very cold and dusty air for the lungs; while the beard and whiskers, serve to protect the throat from the effects of cold.

In order to preserve the hair, and promote its growth and beauty, it must be frequently washed, and the comb and brush be regularly and daily applied. Some persons suppose that water is injurious to the hair, but this is a great mistake,—the finest, and most beautiful hair is seen among those

natives who pass the greater part of their lives in bathing and swimming in the ocean.

At least once in every week, the head should be well washed with water and Castile soap, after which it should be thoroughly dried with a towel; it should also be brushed daily, not only passing the brush over the hair, but on the scalp at its roots, applying sufficient friction upon the parts to produce an agreeable glow. By this means the hair will improve in softness, luster, and firmness, and there will be less liability to baldness. An excellent preparation, much used as a shampoo liquid by hairdressers, is made by dissolving salt of tartar, (*pure carbonate of potash*,) two drachms, in clear rain-water, one pint. A small portion of this is rubbed upon the head until a lather is formed, when the hair and scalp is thoroughly cleansed by rubbing, the lather is then removed by pouring on clear water, and the head well dried. After the use of this or any other wash, the scalp should be made to undergo a degree of friction with a hairbrush.

The custom of braiding or twisting the hair very firmly, so as to prevent a free circulation of the fluids by which it is nourished, tends very much to deprive it of its smooth and glossy appearance, and favors baldness. A similar result will follow an inattention to the hair, allowing it to become matted or entangled. The coarse and fine comb, followed by the brush, should be used daily; and care must be taken that the scalp does not become abraded or injured by forcibly pressing the comb upon it.

There is a natural tendency in the hair, to fall off, after it has attained a certain growth, its place being resupplied by new hair; but this dropping off may be prevented, and the hair rendered permanent, by cutting or shaving it at certain intervals. This is more especially advantageous to children, in whom an abundance of hair is apt to be accompanied with weak eyes, pale complexion, headache, scaldhead, &c. In them the hair should be cut short, that the head may be protected from too much heat, beside which it renders it less liable to impediments in the circulation of its fluids, and the scalp may be more easily kept clean. When the hair is cut frequently, it is prevented from dividing at the ends and becoming forked, which is an evidence of its unhealthiness.

The baldness of age is owing to a permanent absorption of the hair-glands, and cannot be remedied by any means whatever. But a debilitated condition of the hair-glands may exist at almost any time, occasioning a thinness or deficiency of hair, and ultimate baldness. This abnormal condition of the hair-glands may be produced by several causes; it is very apt to follow exhausting fevers, or long-continued, debilitating chronic disease; violent mental emotions, as excessive fright, have also given rise to it. Prostration of the nervous system by intemperance in eating and drinking, late hours, venereal excesses, and intense application of the mental powers, are almost certain to be followed by premature baldness. One great cause of baldness in this country is the exalted temperature at which the head is kept by the constant wearing of the hat; the increased heat produced gives rise to an augmented perspiration, which is not allowed to escape from the head by evaporation, but

is retained there by the continued presence of the hat. This must, of course, ultimately impair the energies of the hair-glands and cause baldness. The use of the hat as a receptacle for newspapers, handkerchiefs, gloves, books, &c., is improper, pernicious, and ungentlemanly—yet how common is it for individuals to thus transform it into a kind of pigeon-hole. *Keep the head cool*, is an old and very philosophical precept, which should be rigidly regarded by every one,—yet, strange to say, in some sections of country, the hat once placed upon the head in the morning, is pertinaciously kept there all day, both in the parlor, bedroom, sick-room, and kitchen, as though there were danger in its removal; its only periods of dislodgement being during meals, and at bedtime. Frequently the evil is perpetuated at night by substituting the cap for the hat. If a cap be used through the night, it should be a coarsely netted one, for the single purpose of keeping the hair smooth,—for it is of the utmost importance that the air should have free access to the hair and scalp at all times.

Another cause of premature baldness is the application of cologne, essential oils, rancid oils or ointments, cosmetics, &c., to the hair and scalp. These stimulate or irritate the hair-bulbs, deranging their healthy action, and by clogging or plastering the hair, interfere with the escape of the perspiration from the scalp, and keep it more or less in an unhealthy and uncleanly condition. This state of things is also very much augmented by the entire neglect of washing the hair, which is always necessary to its strength and beauty. As a general rule, pomatum of any kind is an improper application to the hair; but when persons are determined to use it, I know of no one equal to the following:—Take of fresh beef marrow, three pounds; good, sweet, fresh lard, half a pound; melt these together and strain; while cooling, add one pint of a tincture made by macerating powdered Red Peruvian Bark one ounce, in good French Brandy one pint, for two weeks, and then filtering. Stir the whole together, and when the mixture is nearly cold, add a small quantity of Oil of Lavender, or Oil of Bergamot, to impart a perfume to it. This may be applied to the head two or three times a week; but whenever it is used, great care should be taken to wash the head weekly with the shampoo liquid above referred to.

Another very common cause of injury to the hair-glands is, the practice in families, also at the barbers, and while traveling, of using the combs and brushes of others. Many diseases of the hair and scalp originate from this cause, as well as from wearing the hats, bonnets, or head-dresses of others; and frequently a person with a diseased head, by reclining it upon the head or shoulders of another, so that the heads of each come in contact, has communicated the disease. Syphilitic and other diseases are often imparted in this way. I would as soon think of using the toothbrush, or toothpick of another, as to use his comb or brush, and, independent of its pernicious tendency, it is a very filthy habit,—one which will never be practiced by the true gentleman or lady. Every person, both young and old, should use a comb and brush which no one else is allowed to employ, both for purposes of health and cleanliness. Parents who take an interest in everything condu-

cive to the welfare of offspring, should see that each child is supplied with its own toothbrush, comb, and hairbrush.

Many nostrums are before the public for the restoration of the growth of the hair, after it has commenced falling out, and many of them are really worse than useless. Persons should be extremely careful how they employ these advertised mixtures, for frequently they facilitate, instead of retard, the falling out of the hair. When the hair has fallen out from fevers, it is very apt to return in a few months afterwards; or, if it do not naturally make its appearance, a very slight stimulation of the hair-glands, by means of friction with the hairbrush, with frequent washing of the scalp, will impart a new energy to them, resulting in a growth of the hair.

But when the enfeebled state of the hair-gland is of some standing, or does not improve under the mild stimulus above referred to, the following course will frequently remove the difficulty, and restore the organs to a healthy condition, thus insuring a luxuriant and vigorous growth of hair. First, brush the scalp daily with a stiff hairbrush, five or ten minutes each time, for the purpose of cleansing the hair and removing any dandruff which may be present, as well as to give a healthy excitement to the scalp and surrounding parts; the most appropriate time for this is in the morning, when the system having been refreshed with sleep, is in its full strength and vigor and better prepared to second our efforts, than when it is fatigued by a day of mental or physical labor. After this friction, apply upon the scalp and hair, a mixture composed of Alcohol, two pints; water of Ammonia, half a pint, Castor Oil, one gill; Oil of Bergamot, enough to perfume. A part of this should be well rubbed on the scalp, for several minutes each time, with the pulpy ends of the fingers, and particularly on those parts where baldness, or eruptive disease exists; its application for the first two or three times generally occasions considerable smarting, but this soon disappears. The hair should not be disturbed again through the day, except a loose brushing to properly part and arrange it, and the cooler the head can be kept, and the more easy the access of air to it, the more beneficial will it be.

Every week or two, the head should be washed by the shampoo liquid named above,—the general health of the system must also be attended to,—severe studies, late hours, intemperance, excesses of all kinds, hair-dyes, and curling the remaining hair with hot irons, must be avoided, as they are all positively injurious to the growth of the hair. The hair on its first appearance should be kept short, and for this purpose must be cut every two weeks, or at least, as often as once a month, by which course the hair-glands will ultimately acquire renewed vigor and health. A preparation for the hair somewhat similar to the one just referred to, and which is sold as a nostrum, is composed of powdered Cantharides, half an ounce; neutral spirits, two pints; strong Aqua Ammonia, half a pint; Castor Oil, two pounds and a half; Oil of Bergamot, two ounces and a half; mix, let them stand for a few days, and filter.

The various preparations for dyeing the hair, are filthy, troublesome and destructive to the hair and its glands; they most generally contain nitrate of

silver as the chief constituent. Twiggs' hair dye, as it is called, made of Sugar of Lead, Lac Sulphur, and Rose Water, is an offensive compound, frequently fails in producing any desired effect, and when constantly used, permanently stains and disfigures any silver or gold which the individual is accustomed to wear or carry about him. I have known instances where the gold watches carried by persons using this abominable mixture, were materially injured by it. It acts by the sulphur being first absorbed into the system, and then excreted by the perspiratory vessels, in the same manner as when taken internally.

Attentions to the *feet* are as important to the general health, as any other measure to which reference has been made. They should be washed every day, and in warm weather, if circumstances will permit, twice a day, wiping and drying them thoroughly, especially between the toes. The nails of the toes require as much care as those of the fingers; they should never be allowed to grow too long, but should be properly clipped with scissors every three or four weeks, or oftener, if they require it from rapid growth. The stockings may be made of cotton, or woollen, the former being better suited for warm weather, and the latter for cold—though some persons, subject to cold feet, require woollen in all seasons. They should fit well, being neither too loose nor too tight, and the seams should not be so large as to make the feet feel uncomfortable. The shoes should be exactly fitted to the shape of the foot, so as to allow the motions of the feet during walking to be made with the utmost ease and freedom, having them neither too loose, nor made so as to press uncomfortably on any part of them. The heels should be made sufficiently broad and not too high for males. Females will do better not to wear heels to their shoes at all; they throw the weight forward upon the toes, are very apt to be a cause of corns, and impart to the lady a very undignified and ungraceful appearance, as may be seen among those who adopt *the present fashion of heels to their shoes*. It is more important for physical comfort that shoes should fit well, than that a coat or dress should, and every person whose circumstances will permit, should have a pair of lasts suited to his own feet, and use only the boots or shoes made upon them. Calf-skin, or horse-skin is the proper material for the boots or shoes of men, while goat-skin may be worn by women. Sometimes, individuals are troubled with tender feet, which become chafed and irritated upon very slight causes; for such, soft-dressed moose-skin will be found a very excellent material, and in very untoward cases, shoes made of plush may be worn with advantage. In addition to the character of the stockings and shoes among those whose feet are tender, they will materially add to the health and strength of their feet, by bathing them with cold water, every night just before retiring to bed, drying them with moderately rapid friction, so as to healthily excite the skin, and arouse the capillary circulation. An inattention to these matters is always attended with unpleasant consequences. When shoes or stockings are tight, too loose, or improperly shaped, they not only render walking uncomfortable and even painful, but occasion corns, bunions, distorted toes, growing of the great toe nail into the flesh, &c. When the feet blister from

walking, I know of no better preparation than the following: Take of Burgundy pitch, two ounces; Beeswax, half an ounce; Olive Oil, a table-spoonful; melt together and strain. This spread upon cotton batting and applied to the soles of the feet, affords prompt and permanent relief.

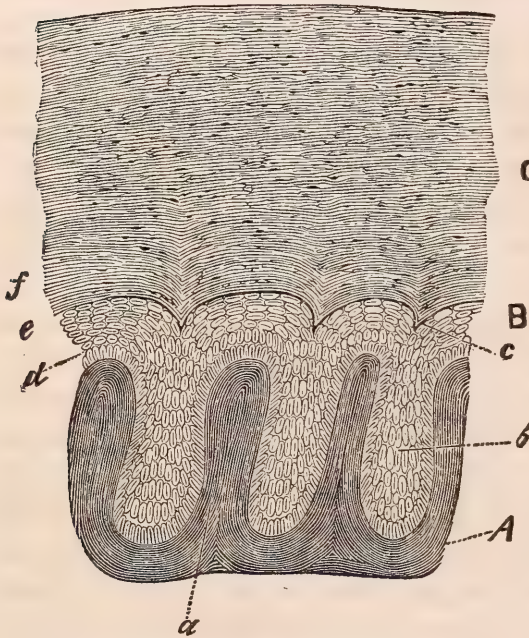
The feet of many persons sweat excessively and occasion disagreeable sensations as well as an unpleasant odor, especially if they are inattentive to cleanliness. This may be lessened by daily bathing the feet with soap and water, or with water slightly acidulated with nitric acid, and drying them with considerable friction. If the perspiration is attended with coldness, it is indicative of general weakness, which may be overcome by the use of tonics and other appropriate treatment.

Between the feet and other parts of the body there exists a very intimate sympathy, in consequence of which, when these members are cold or chilled, it is very apt to cause disease of one or more of the internal organs. Consequently it is of great importance that the feet be shielded from cold and dampness, which may be accomplished by wearing warm stockings adapted to the temperature of the season as well as boots or shoes the soles of which are sufficiently thick. In damp and cold weather, the soles should always be thick, and the upper leather be doubled. Boots and shoes made thus are invaluable for winter wear. An excellent method, which is now being adopted by all prudent persons, is to have the inner sole of shoes intended for wear in cold or unpleasant weather, made of cork and covered with a layer of woollen cloth; some have a layer of India-rubber cemented to the inner surface of the sole, and which is useful to protect the feet from wet. But India-rubber over-shoes, although they protect the feet most thoroughly from external dampness, are not proper articles for wear. India-rubber being a conductor of heat, does not sufficiently prevent its escape from the sole of the shoes, in consequence of which the feet are not kept so well warmed, as when thick leather uppers and soles only are worn; beside, it prevents the escape of the perspiration of the feet, thus rendering them cold and wet, from which colds, coughs, rheumatism, and many other diseases are produced. Thin shoes, not sufficient to protect the feet from damp, are a fruitful source of colds, coughs, consumption, rheumatism, neuralgia, piles, many painful diseases peculiar to women, both periodical and otherwise, sore-throat, enlarged tonsils, and many other affections of a serious character.

When the feet become casually wet, the shoes and stockings should be at once removed, the feet bathed in tepid water, and thoroughly dried by considerable friction with a coarse towel. In cold and damp weather, many persons frequently contract colds and coughs without being sensible of any improper exposure; this is usually owing to damp feet from excessive perspiration. On retiring, the foot dress is removed, and without any attention to the feet, the body is wrapped up in cold sheets, the feet become cold and chilled, and colds, &c., are the result. If one cannot attend to washing and thoroughly drying the feet every night, he should, especially in cold weather, toast them some time at the fire before getting into bed. I have cured severe colds in hundreds of instances during cold and damp weather, by simply having the

soles of the feet toasted for half an hour or an hour at a time, before retiring, continuing it for several nights in succession, with the application of a warm iron or two to the feet during each night. Indeed, persons whose feet perspire freely in the winter, will find it advantageous to toast and dry the feet thoroughly every night. The application of warm irons to the feet during the night is only useful in cases of coughs, colds, and the like, and also where the feet are habitually cold, as in persons advanced in years; when used unnecessarily and constantly it renders the person too susceptible to external impressions.

Fig. 11.



Transverse section of nail, magnified 250 diameters. *a*, layers of the bed of the nail; *b*, horny layer; *c*, ridges of the proper substance of the nail; *d*, upper flat cells of the mucous layer of the nail.

shape, and is paler because of the diminished quantity of capillary vessels; and instead of the folds, merely ridges and furrows are to be seen. At the root, the horny layer passes more or less deeply into the fold of the nail, and at the same time runs, in a thin layer which becomes exceedingly fine, upon the upper free part of the nail. The root itself is hidden between two folds of the dermis or true skin. The nail grows by a continuous addition of new matter from the fine folds at its under surface, which causes its thickness; while a similar addition of new cells or matter at the edge of the root, causes it to grow forward. When cut, the nails grow continually; but when uncut, their growth is limited, and they curve forward, covering the entire ends of the fingers.

Many causes may interfere with the formation of the nail, by disorganizing the cells which are formed on its under surface, devitalizing them, as for instance, blows, crushing, burning, suppurations, &c., which will result in a partial or complete detachment of the nail from the true skin. But if the injury has not irreparably destroyed the vitality of the

The *nails* are metamorphosed parts of the epidermis or scarfskin, and consists of two layers, a soft, mucous, and a horny layer. The horny layer, or proper nail, as found by a microscopic investigation, consists of many layers of thin, polygonal, flat scales or plates. The bed of the nail or the surface from which it is produced, instead of being papillated like the epidermis or scarfskin, forms minute longitudinal folds, which are abundantly furnished with capillary vessels, from the exterior of which is produced the nail; between these folds and firmly attached to them, are plates or scales, which are gradually pushed forward and upward, to coalesce with the nail proper. Toward the root of the nail the part is of a half-moon

producing surface, a new nail will be reproduced after a time, possessing the same character as the old one.

To properly preserve the nails, some attention is necessary. They should be carefully trimmed, from time to time, with a sharp knife or scissors, and this is best done after having washed the hands and feet with soap and water, which renders the nails more soft and pliant, and less disposed to break. Frequently, without this precaution, an attempt at cutting the nails, however sharp the instrument used, will cause them to break unevenly and roughly. Any accumulations of dirt under their free edges, should be removed by a piece of soft wood, or still better by a nail-brush; dirty nails are always inexcusable, they betoken negligence or filthiness, even among those whose daily work necessarily soils them; except, however, in cases of stains, which cannot always be avoided. Many persons have very thin and exceedingly brittle nails, which are constantly breaking on slight causes. Such, should not allow their nails to grow quite up to a level with the tips of their fingers, and should never enter upon any labor which might break them, without having first placed them for a short time in soap and water.

Besides trimming and cleansing the nails, more especially of the fingers, the edge of the scarf skin which grows over the root, should be pushed back every six or eight days with some smooth instrument, thus preventing that condition of it generally known as "hang nails." This skin should not be cut, as is sometimes improperly done by ignorant persons; neither should the nails ever be scraped, unless for the purpose of removing superficial stains, roughness, or similar conditions, because, the delicate structure of the nail, on which its beauty and excellence depend, would be thereby injured.

Continued pressure upon the nails is very improper, especially on those of the toes; it pushes the nails against their roots, creating pain and irritation, and an ultimate thickening and distortion of them, and which, if persevered in, will render these consequences incurable. Inversion of the toe-nail, a very painful and obstinate difficulty, is apt to be produced by a continued compression of the toes and nails.

Biting the nails is a certain cause for their deformity, as well as of the finger ends. Whenever a child is observed to be forming this habit, it should be checked at once, and the readiest way to accomplish it, is to confine each finger end in a stall, or oblige it to constantly wear gloves, until the habit is overcome.

It may not be amiss at this place to make a few remarks in relation to the management of the *eyes*. These delicate and complex organs which afford us so great an amount of inexpressible enjoyment, meet with less attention from the majority of individuals than any other organ of the body, and are so constantly abused, that, it is rather a matter of wonder, we do not meet with more eye diseases, and blindness, than are found to exist. I do not intend to enter into the anatomical or mechanical construction of

the eye, as these are well described in many popular works, and school-books of the present day, but will merely refer to a few general rules for the preservation of the sight and the healthy condition of these organs.

During the day the counting-rooms, parlors, school-rooms, work-shops, or other places where the eyes are employed in writing, reading, sewing, or in any continued exertion, should be so well lighted that these organs may be readily used without the least effort at straining whatever. Independent of any straining effort of the eyes, darkened rooms or those in which there is a deficiency of light, are very injurious to them, especially when engaged in any occupation requiring their constant use. And yet, notwithstanding this fact, how common it is to create a species of gloomy darkness in our parlors and sitting-rooms, by means of curtains, or to have our counting-rooms and offices in places where very little light enters, except through sky-lights and other eye-destroying contrivances. Reading, writing, sewing, and other straining employment of the eyes, by twilight, or at any time by an imperfect light, will eventually injure them beyond remedy, if persevered in.

Too great an amount of light, is as pernicious as a deficiency; thus, writing or reading in the glare of the sunshine; or at night with the blaze immediately in front of the eyes; brilliancy of colors at night, as during some theatrical or other amusing representations; sitting before the intense glow of a coal fire; reflected sunshine from snow, white painted houses, white sand, or other light-colored bodies, &c., are all injurious to the sight, and should be avoided. The artificial light employed during the night should be of sufficient intensity to enable the eyes to be used without any straining, and it should be so prepared, as to give a white color, resembling as much as possible that of daylight; and the nearer it approaches to this the more salutary will it be for the eyes. The light of a solar lamp, or that produced by burning gas, approaches the nearest in color and intensity to that of the day, but notwithstanding this, much injury may be produced by an improper use of them.

In the majority of occupations, and more particularly in those of reading, writing, and sewing, the light should be placed, either behind the individual, or at his left side, and should be allowed to strike from above downward. By this course, the glare of the light reflected from the paper, or object under examination, is materially lessened by the eyes being placed between the direct rays and reflected rays, and, in consequence, they are considerably less taxed than when the full reflected rays of direct light are allowed to be thrown upon them. Engravers, watchmakers, and several other artizans require the action of direct light; they may escape the violence of its reflected rays, and diminish the amount of injury to the eyes by allowing the light to pass through thin paper of a greenish or blueish tint. Experiment will determine the tint, that being employed which will give a soft, white light; white tissue paper is not so beneficial to the eyes as is generally supposed.

The worst position is that in which the light strikes directly into the

eye. Women who sew, as well as many students, &c., are in the habit of using a lamp or candle which gives out a deficient amount of light, to obviate this, they place the lamp as closely as possible to the book or work before them, a large portion of the light ascends into the eye, and ultimately injures it. All persons should remember that light, to be advantageous, should strike from above downwards, and never from below upward. All lamps should have their flame considerably above the level of the eyes, and those short, hand lamps, whose flame is below these organs, or even on a level with them, are the best calculated to destroy vision. True, the evil influence may be lessened by means of a shade, which would prevent the light from passing directly to the eyes, but then the surrounding room would be darkened, and in raising the eyes from the object to gaze around the room, the sudden changes from brilliant light to darkness, must effect pernicious results; these, however, may be entirely avoided by having another less brilliant light in some other part of the room. Many persons wear a shade over their eyes, when engaged in reading, or writing by a brilliant light, which is certainly better than to have the eyes exposed to its dazzling rays.

The eyes are frequently taxed by the glare of the reflected light from white paper, especially when this is used continuedly and for a length of time. To obviate this difficulty, the paper of books, and writing paper, should have a uniform bluish tint, which will at all times be found superior to pure white paper. The Gas Company of this city make all their bills out on yellow paper, the very worst color for the eyes, that could be selected. One of the young men who prepares these bills, has so greatly injured his sight, that he cannot read nor write readily, especially by artificial light, without the aid of spectacles; yet, notwithstanding this ruinous course to the eyes of their clerks, they still persist in using yellow paper for their bills. The injury to the eyes from this cause may be greatly obviated by wearing plain, glass spectacles of a grayish-blue tint, of that depth which will present the paper to the eyes in its whitest aspect. But the remedy is nearly as bad, though not so immediately, as the disease.

The best light is daylight, but too much glare, even from this, should be avoided and rooms which are so situated as to require a modification of the intensity of the light entering them, should be provided with curtains of some transparent material, having a green or blue tint, so as not only to admit a sufficient degree of light, but likewise to impart that color to it which is the most grateful to the eye. Nor is this all, the color of the walls of a room is fully as important as the proper character of its curtains. A white wall is not suited to all apartments, and instead of seeking a color or combinations of colors to please the fancy and injure the eye, we should rather adopt those tints best calculated to preserve vision. If a room is exposed to a constant and bright sunshine, its walls may be colored black, brown, gray, blue, or green; the same colors, but lighter, may be used in rooms having an eastern or western exposure, and which are occupied all day long. If the sunshine does not enter these latter rooms, red, sal-

mon-color, reddish-brown, &c., will be the most appropriate hues, as well as for the walls of a room having a northern exposure.—*W. E. Coale.*

I have often wondered at the erroneous custom of painting houses in cities, of a red or white color externally instead of adopting the more general tints of nature, green or blue. The glare of reflected sunshine coming from a white or red painted house, must always be disagreeable and pernicious to the eyes of passers by, and opposite neighbors. In the country, the same objections do not exist, as regards the color of the houses externally, because they are at greater distances from each other, and the reflection from them is seldom encountered.

A common cause of weakness of sight, at the present day, is the custom of printing works in very small type, which requires considerable straining of the strongest eyes, even when in the best kind of light. Works, which when properly printed would make several volumes, are thus contracted into one, and though it may be immediately easier in a pecuniary sense, for the purchaser of such books, yet it ultimately becomes more costly, both to his sight and his pockets. This fine printing, now-a-days, is a fashion, and it is a difficult matter to overthrow a fashion, however silly or injurious it may be, but it is to be hoped, that the time is not far distant when both publishers and purchasers, will be more attentive to their interests in this respect, individually and collectively. Fine type is fit, principally for the notes on the several pages of a work, and when these notes are lengthy, there should be leads between each line.

To preserve the sight to a good old age, the following rules should be attended to; viz:—

Attend to the general health of the system, maintaining as much as possible the integrity of all the excreting organs, as the skin, lungs, bowels, kidneys, and liver, also adopting correct rules of diet and hygiene; for the eyes always participate, in a greater or less degree, in any departure of the system from its healthy standard. Avoid, all the following causes of injury to the eyes, as, intoxicating liquors; rich and high-seasoned food; indigestible food; excess in venery; exposure to strong, cold winds, especially the north-west, and easterly; dusty, smoky, and vapory places; irritating the eyes by rubbing them, or by wiping them with a cotton handkerchief; all brilliant or dazzling light, as facing a hot fire, a lamp, candle, or other intense light, likewise the reflected light of the sun from white, red, or any brilliant and reflecting surfaces; all places of instruction, or amusement, where the lights are placed so low, or in such a situation as to throw a glare into the eyes, requiring an effort to look at the lecturer or performer; any attempts at employing the eyes by deficient light, whether natural or artificial, and above all do not strain them to see minute objects by such imperfect light; all sudden transitions from darkness to light, and vice versa; all books which are printed in fine type, requiring a straining of the eyes to read them any length of time; and lastly, avoid reading, or sewing, &c., for any great length of time, by artificial light.

When the eyes are exposed to a glaring light, and especially if they be

weak, a green or black shade, or some other defence should be worn before them, and, in many instances, plain spectacles, of a green or neutral blue tint, will be required.

When the eyes begin to fail in vision, so that an effort or straining is required to read or sew, a continuation of their unaided use will prove very injurious to them. Persons, who have the proper regard for these organs, will, when thus deficient, at once wear spectacles. These should never be procured of jewelers, watchmakers, or simple opticians, because such are generally ignorant of the correct mode of adapting glasses to the eye, and from their want of correct knowledge on this point, thousands of eyes have been permanently injured. Always have the glasses selected by a well-known oculist or optician; trust none but those who have a reputation in this matter, with the management of these delicate organs. The feeblest powers should be chosen at first, and should not be increased until absolutely required. The glasses selected, should be such as will enable the wearer to read at the ordinary distance, with ease and distinctness, and with as little magnifying of the letters as possible; and although glasses for this purpose are not adapted for seeing distant objects, yet, at the same time that the above-named requisites, ease and distinctness in reading, are found, those among them which will enable the wearer to see the farthest off, will be found the most suitable. Or in other words, select glasses which, while they do not interfere with clear, easy, and distinct observation of letters held at the usual distance from the eyes when reading, without too greatly magnifying them, will at the same time, render the wearer capable of seeing objects at a greater distance than glasses of increased convexity. This is more especially important during the first years of wearing spectacles; for, if too convex glasses be used from the start, the eyes become much more rapidly impaired.

The best form for spectacles is that known as the pulpit or barrister's, in which the lower half only of the convex lenses are set in semi-circular frames; so that, while in reading, one looks through the glasses, yet when he raises his eyes, he may readily discern ordinary and distant objects over the upper straight edge of the frame. The frame of the spectacles should not be too heavy, nor too clumsy; the center of each glass should be exactly opposite to the pupil of the eye, and the glasses, which may be beneficially made of good crown glass, should be sufficiently large to command the field of vision immediately before the wearer. When made so small as to materially lessen this field, it renders their use painful and injurious to the eyes. In wearing them, the glasses should be placed as close as possible to the eyes, without touching the eye-lashes, otherwise the eyelids will become irritated. Persons advanced in years, although requiring convex glasses for sewing and reading, will frequently be unable to recognize distant objects without the aid of concave lenses; such may have circular eye-pieces to the spectacle frame, the lower half being filled by convex glasses for reading, and the upper half by concave for distant vision.

Near-sighted, or myopic eyes require concave glasses, and much care is necessary that the proper degree of concavity be obtained, for if they be either too concave, or too convex, the eyes may be permanently injured. Occasionally persons are met with, who cannot read at all, without holding the print almost against their eye-balls, and such persons find it an impossibility to obtain glasses which will afford them the least benefit in this respect. Such eyes require a peculiar construction of lenses, and which I will take this opportunity of stating may be obtained of Messrs. Spencer & Eaton, opticians, Canastota, N. Y., for twenty or thirty dollars, the price depending on the character of the abnormal vision, and the skill and labor required in the formation of suitable glasses. These gentlemen have been successful in preparing lenses for a number of persons, who found the ordinary spectacles worse than useless.

CHAPTER XIII.

Attentions to the Bowels.—Constipation.—Kidneys.—Passions.—Love. Fear.—Anger.—Grief.—Joy.—Occupations, &c.

BESIDE an attention to the external condition of the body, it is highly important to health and comfort, that the *bowels* and *kidneys* be kept in a healthy condition. These organs are intended by nature for the removal of those refuse and worn-out particles of matter, which are not only of no farther utility to the system, but which are actually pernicious when retained.

No person can continue in the enjoyment of good health, while the evacuations from the bowels are imperfectly discharged. As a general rule, we find that among those persons whose digestive organs are strong and healthy, the bowels are evacuated once in every twenty-four hours. There may be occasional exceptions, as in the case of some plethoric or corpulent individuals, who find two evacuations per day necessary to prevent headache, and other unpleasant symptoms; while on the other hand, cases will be met with, in whom the bowels regularly perform their offices once in every forty-eight hours, and without any unpleasant consequences to the system. Beyond this period, it is unsafe for any one to allow the bowels to remain unmoved.

A very common cause of disease is constipation of the bowels, or costiveness, and which may be occasioned by numerous circumstances which tend to debilitate the general system, as well as the organs subservient to digestion; among these circumstances, the following may be named as the most usual:—improper diet, as the use of high-seasoned and indigestible food, much fat or butter, warm bread, hot drinks, spirituous liquors, astringent wines, &c., sedentary habits, or a want of proper exercise; indolence, laziness, irregularity of habits, late rising in the morning, and various

excesses. A very common cause of costiveness is an inattention to the natural calls of the bowels, neglecting their evacuations at such times, and thereby cultivating a condition of habitual torpor of these organs. This neglect is always followed by its consequent suffering and wretchedness. Individuals wholly absorbed in business and money-making are very prone to disregard the calls of nature in this respect; persons who travel considerably, from not having the opportunities of retiring in a proper manner, or who fail to avail themselves of the occasions when they do offer, speedily become constipated. Many persons who pass most of their time in company, from a mistaken delicacy, withstand or disregard these natural promptings, and thus induce a permanent torpor of the bowels.

A constipated condition of the bowels will give rise to many evils, thus, it will eventually cause a derangement of the digestive functions, whereby the blood will become impaired from the formation of an impure and faulty chyle. It interferes with the free circulation of the blood, frequently occasioning a pressure of this fluid on the brain, which is a very serious matter, especially for those of plethoric or apoplectic habits. It effects a derangement of the nervous system, giving rise to lowness of spirits, nervous headache, nervous excitability, spasmodic affections, &c. Flatulence, loss of appetite, disturbed sleep, bad dreams, swelling of the bowels, headache, debility, piles, and not unfrequently convulsions, may all originate from that condition of the bowels which is being now considered. Indeed, the sufferings produced by this cause, are too numerous to be detailed in this work.

Habitual costiveness should always be overcome, either by proper discipline, or by a correct course of medication; of these two means, the former is by far the better. No individual should ever resist the inclination to evacuate the bowels, whenever there is the least opportunity for attending to it. If we would obviate the mischief occasioned by deferring these evacuations, we should never hesitate a moment to comply with the calls of nature; it is much better to be accused of a want of delicacy by the over-fastidious, than to have the train of evils consequent upon neglect.

The proper discipline to adopt in this matter, is, in the first place, to avoid all those circumstances which are apt to cause the constipation; abstaining from high-seasoned, or other improper food, wines, liquors, &c. Secondly, to strengthen the whole system by habits of regularity and exercise,—dispensing with the late hours of the night for study or amusement, rising early in the morning, and exercising daily in the open air, either by walking, running, jumping, dancing, or other active movements, and also attending to the condition of the skin. Daily frictions over the stomach and bowels will be found a valuable aid in our means for obviating costiveness. This may be effected by the individual himself, but is much better when performed by the hands of a second person, rubbing and slightly working or kneading the parts for ten or twelve minutes each time. Thirdly, to adopt that kind of food which does not disagree with the stomach, and which will act as a gentle laxative. Instead of consuming large quantities of animal food, the diet should be principally vegetable, care being always taken to

masticate it thoroughly before swallowing. Among the articles proper to be used, are, ripe fruit, stewed fruit, which may be sweetened or not to suit the taste, especially whortleberries, dates, prunes, dried apples, dried peaches, raisins, figs, &c.; boiled greens, brown bread, wheat bread with a large proportion of Indian meal, cornbread, molasses, &c., and for drink, molasses and water, prune water, and other liquids slightly acidulated with vinegar or lemon juice, buttermilk, and sweet whey. Of course, among the articles just named, those which disagree with the stomach are not to be used. A tumbler of good cider, taken every morning before breakfast, will frequently be found beneficial; with some, a small piece of saleratus or bicarbonate of soda added to it, will improve its action; while with others again it will prove an improper remedy, on account of its disagreeing with the stomach. Fourthly, the mind itself may be so cultivated as to eventually aid in inducing natural habits of regularity of the bowels. Locke recommends as a means of removing costiveness, "to solicit nature, by going regularly to stool every morning, whether one has a call or not." Dr. L. B. Coles, in a valuable little work entitled "Philosophy of Health," and which contains much very excellent matter, says truly on this subject,— "The operation of the mind on the physical system, is always great, especially in chronic complaints. A person with costive bowels, should have a mental determination to have a natural evacuation of the bowels at some regular hour in the morning; just after breakfast should be preferred. By a mental calculation—by bearing the subject in mind—by thinking and desiring—by electrifying the bowels into action by the force of thought—by intending to have them move about that hour,—very much may be done by way of facilitating such a result."

Among the medicinal measures for removing costiveness, daily injections are to be preferred, whenever they will answer the purpose. They should consist merely of cold water, or of cold infusions of some gentle laxative agent; occasionally, tepid injections will agree best with certain persons, but a long-continued use of them will relax the parts and produce the very difficulty which it is intended to obviate. The proper period for employing an injection, is immediately after rising in the morning; but in all cases, it should be aided by the means above recommended, so that the bowels may ultimately act regularly, without requiring its use.

In some obstinate cases of costiveness, it may become necessary to administer purgative medicines, more, however, for the purpose of removing the accumulated feculent matter, than for remedying the torpor of the bowels. The great quantity of cathartic pills, powders, and mixtures, which are annually swallowed by the people of this country, from a desire to regulate the functions of the bowels, has been productive of immensely more mischief than is generally suspected. True, the physic unloads the bowels, but in so doing, its action tends to diminish the tone of the intestines, so that instead of removing the costiveness, it aggravates it, leaving the bowels in a more torpid condition than before, and thus requiring a more frequent repetition of the dose, so that eventually, an operation cannot be obtained without it. Beside which, it not unfrequently occasions piles, strictures of the rectum, dyspepsia, torpor of the liver, dropsical affections, &c.

Unless the constipation be owing to, or is accompanied with, some chronic disease of the liver, stomach, bowels, or other organ, it is always safer and more efficacious to remove it by diet and regimen, than by means of medicine. And where medicine is actually required in these cases, the course to be pursued will be found under the treatment for Constipation, in that portion of the work devoted to diseases and their remedies, *which see*.

Sometimes, instead of a costive state of the bowels, they will be evacuated too frequently, not amounting, however, to a diarrhea. This is generally owing to a relaxed and irritable condition of them, requiring a suitable treatment, depending upon the cause of the difficulty, and for which a skilful physician should always be consulted. However, it may be proper to remark, that even in this state, the unhealthy condition of the bowels may frequently be overcome by a rigid attention to diet, regimen, and the usual hygienic measures.

Regular and sufficient action of the *kidneys* is as important to health, nay, even more so than regularity of the bowels. The kidneys remove from the blood those effete matters which, if permitted to remain, would speedily destroy life,—uric acid, urea, urates, &c. It may likewise contain various other matters, the result of certain abnormal changes taking place in the system, as phosphates, oxalate of lime, grape sugar, pus, albumen, &c., the presence of which, affords the practitioner a true indication of the peculiar character of those changes. When the functions of the kidneys become imperfectly performed, or suspended, the above matters, urea and urates, are retained in the circulation, giving rise to affections of the kidneys, dropsy, and many other serious diseases. A total suspension of the urinary discharge will occasion death in from thirty-six to forty-eight hours. When the urine is voided in small quantities at a time, or when there is a disposition to urinate more frequently than natural, or when the urine is high-colored, or scalding, these are indications of some derangement in the system, and means should be employed to stimulate the kidneys, or cause them to excrete an increased quantity, or proper quality, of urine. If the derangement be owing to cold, the means recommended in the treatment of Cold, should be employed, aided by an infusion of diuretics, as of marsh-mallow root, and spearmint. If the cause of the difficulty be not known, an attempt may be made to regulate the action of the kidneys by an infusion of parsley root, or, of queen of the meadow root, or, of hair-cap moss, &c., the use of many fruits, as whortleberries, watermelons, grapes, apples, &c., will frequently restore the organs to a healthy condition.

Should these simple means fail to effect any relief, the difficulty then assumes a more serious aspect, as it may be connected with certain acute or chronic affections of one or more of the organs of the body. Under such circumstances the difficulty should not be trifled with by delay or self-treatment; a physician should at once be consulted, who, if he be thoroughly versed in his profession, and a skilful practitioner, will not only make a minute enquiry relative to all the various symptoms of the case, but will subject the

urine itself, to a careful chemical and microscopical analysis, that he may, from its constituents, understand the character of the changes taking place within the system, and thereby be able to prescribe the proper treatment. In the present improved state of medical science, no practitioner can be considered thoroughly conversant with his profession, who neglects the aid of, or does not use a microscope; true, it is not required in all diseases, but there are a vast number in which its employment can not be safely dispensed with, and it will be found useful in all.

By this, I have no reference to certain individuals who, under the name of *uroscopists* or *urine doctors*, pretend to know the character of all diseases by a mere inspection of the urine; I would rather guard the public against the impositions practiced by this class of men, who, however correctly they may occasionally guess, seldom effect any cures. It must be recollected that the *appearance* of the urine is very uncertain, and cannot be relied upon as a discriminating mark of disease. Its appearance, as well as its composition, may be affected by various circumstances; thus, changes in the weather, depressed or excited passions, change in the quantity and quality of the food, as well as in exercise and clothing, together with numerous other causes, may materially modify the condition of the urinary discharge, as to quantity, appearance, and chemical composition. The urine may present in different specimens, the same color, the same apparent deposits, but its true character can only be known by a scientific chemical and microscopical analysis; simple inspection alone, can never enable any one to correctly diagnose disease, and he who attempts it, is a mere quack. A writer on this subject observes: "Any one who attends to this," (the cause of change in the urine,) "will be astonished at the impudence of those daring quacks, who pretend to find out diseases, and prescribe to patients, from the bare inspection of their urine. These impostors, however, are very common in some parts, and, by the amazing credulity of the populace, many of them amass considerable fortunes. Of all the medical prejudices which prevail in this country, that in favor of *urine doctors* is the strongest. The common people have still an unlimited faith in their skill, although it has been frequently demonstrated, that not one of them is able to distinguish the urine of a horse, or any other animal, from that of a man."

In relation to the skin, the checking of perspiration by uncleanness, sudden exposures, colds, damp houses, damp clothes and bedding, wet feet, &c., sufficient has been said in the preceding pages. For treatment see *Colds*.

There is a direct and intimate sympathy existing between the mind and the body, and so powerful is this that any disturbance of the one produces a disturbing influence upon the other; hence, it becomes necessary, not only that the condition of the body be properly attended to, but also what is of equal import, the condition of the mind. How mental action affects the body, or, how the state of the body controls that of the mind, are mysteries not yet solved by the philosopher, though it is well known that this reciprocal action between the two positively exists. And it is not a matter of as-

tonishment to observe the amount of disease and premature death in this country, when we understand the excessive and continued action of the minds of its citizens, in search of pleasure, profit, or discovery. A certain amount of mental exercise is necessary for health of the body as well as health of the brain; and either an augmented, or decreased amount of this action exerts a proportional deleterious influence upon the whole man. The *natural passions* of the human mind, which, when controlled within proper bounds, are intended for salutary and useful purposes, become powerful causes of disease when permitted to be aroused by improper objects, or when allowed to proceed to an unreasonable or ungovernable extent; and these, in particular, should be studied, in order that they may be held subservient to the health and proper comfort of each individual.

Love, is one of the most powerful passions of the human mind, and to produce a happy and sanative influence upon the whole constitution, it should not only be directed upon a proper object, but should likewise be held in obedience to reason and common sense. When this passion is disturbed by other passions, as fear, or jealousy, it is calculated to produce much physical mischief, especially upon the brain and nervous system, gradually undermining the constitution; and the same may be said when the passion exists in an ungovernable degree, or, is placed upon some unworthy object. A continued and unsuccessful love, is generally accompanied with grief, or despair, and if not overcome by appropriate measures, will terminate in some acute affection, insanity, or death. Not unfrequently the abnormal state of the brain occasioned by this cause, will lead the sufferer to commit suicide. It is very rarely the case but that persons who are under the influence of a violent attachment, may be cured by proper treatment, which will consist of absence from the object beloved, change of scenery, cheerful society, and an introduction to new faces and forms, with the hope of distracting, dividing, and eventually removing the former passion. Medicines are not required, unless symptoms indicating physical disease, manifest themselves. No special rule can be given for the cure of this passion, as much will depend upon the peculiar mental conformation of each individual under its power, and the advantages correctly taken thereof.

Fear, or dread of evil or danger, is a passion to which all mankind are more or less subject; with some, however, it exists habitually in a great degree, giving rise to disease and various unpleasant symptoms. With many persons, a sudden attack of fear causes an involuntary discharge of urine, or an alvine evacuation; it has likewise produced fever, fainting, diarrhea, convulsions, mania, and even sudden death. The influence of fear varies with different persons; many become quite talkative, some very silent, and others, again, become restless, moving about from place to place constantly. Instances are on record where violent fear has produced immediate idiocy, where the hair has been suddenly changed to a white color, and even where its vitality has been destroyed so that it fell from its roots, leaving the head bald. Paleness of the countenance, a suspension of all the vital functions, tremors, a momentary paralysis of the nerves of sense, &c.,

are usually present among those who become suddenly affected by fear. All these effects are caused by the greater or less degree of depression of the vital powers which invariably accompanies this passion. During fatal epidemics, there is no doubt that more persons suffer and die from the effects of fear, than would, were this passion unknown. In the season of Asiatic cholera, I met with many persons in whom all the symptoms of that epidemic were produced solely by the debilitating influence of fear, and I have no doubt but that many practitioners have met with similar instances.

Persons who are undaunted in some situations, may be extremely fearful in others; thus, many have a fear of remaining in the dark, some experience fear only during a thunder-storm, others have a fear of ghosts, of sailing on the water, of riding in the cars, or on horseback, &c. But these are very apt to be owing to an improper education during early life, or to certain unpleasant mental associations.

The subjugation of this passion is a very difficult task; persons who are subject to it may, however, overcome it to a great extent, by keeping a careful and constant watch upon themselves, endeavoring to cultivate a disposition to retain presence of mind under all circumstances, and to check the first manifestations of fear, and also by the exercise of much as possible of mental fortitude. These measures, aided by a correct training of the reasoning powers, will frequently completely subdue the passion, even when it exists in excess. In the education of children, parents, guardians, and teachers, should be extremely careful never to adopt means of punishment, which will call this passion into existence; cowards are made by the tyranny of teachers and parents over the young. The truly brave seldom commit crimes. But he, who calls the passion of fear into action among children, is manufacturing for the country, both cowards and criminals.

Anger is a passion most generally excited on the moment, which subsides more or less rapidly, according to the nature of its cause. It always exerts a powerful and deleterious influence upon the system, which becomes augmented in proportion as the passion approaches toward insanity, as, when it becomes furious and ungovernable. A person in a fit of anger may be at once recognized by the redness of his face, the furious sparkling of his eyes, and the violent agitation of his whole system. Some are unable to speak, while others are extremely voluble and vociferous; not unfrequently, persons foam at the mouth in a fit of anger. Some persons, when angry, gesticulate violently, stamp their feet, and display an uncommon degree of physical strength; others, involuntarily shed tears.

Violent anger is very deleterious to health, and the more often it is suffered to be aroused, the more frequently will it develop itself upon even trivial causes. From its action upon all the functions of the system, it is liable to cause epilepsy, the rupture of a bloodvessel, convulsions, fainting, apoplexy, and even sudden death. Moderate anger is apt to be longer continued, and accompanied with hatred, malice, revenge, regrets, &c., rendering the person fretful and petulant, and gradually inducing some

permanent disease. They who lead a life of voluptuousness and dissipation, are the more ready subjects of this passion. Suckling infants have often been thrown into convulsions, after having partaken of the breast-milk of a previously angered nurse.

To overcome the propensity to angry feelings, requires much resolution and perseverance. As with fear, it is necessary to have a constant watch upon our minds, maintaining a degree of presence of mind upon the most sudden emergencies, and promptly repressing every angry feeling as it arises. The most powerful means of suppressing this passion is at once to concentrate the whole of the mental powers and resolve to overcome it; let the higher powers of the mind control the person. It is the power of thinking, reasoning, and judging, that renders man superior to the brute; let then, the *man* govern, and not the brute. When angry, contentious words only tend to fan the flame; it is better, therefore, to be silent, to take a draught of cold water, to withdraw one's self from the exciting cause, or adopt any other simple means, until the anger has passed away and reason resumed its sway. Never attempt to settle business, when the mind is in an irritable or fretful condition. Persons of an inflammable disposition should be temperate in food and drink, especially avoiding the use of stimulating food and intoxicating drinks. The true gentleman, the man of proper education, can always hold command over this passion.

Children should be carefully guarded from those causes which will arouse and cultivate their angry passions. Improper punishment, disappointments, tyrannical conduct, partial justice, &c., should be carefully avoided. Children have their rights, which should be held sacred by every parent and teacher. Instead of being treated as mere machines, slaves, or brutes, they should be governed by such methods as will repress evil and cultivate virtuous propensities, remembering that they are but men and women in miniature, possessing every mental attribute common to the adult, though more keenly susceptible and alive to external impressions. "*Train up a child in the way he should go, and when he is old he will not depart from it,*" is a truth too little understood, or too little acted upon in the present age; for instead of training and properly educating them, they are more frequently driven up, as one would drive cattle to market.

Grief, unlike fear and anger, is a passion of long duration, which slowly ruins the constitution and produces permanently injurious results to both the mind and body. It exerts a debilitating influence upon the whole system, enervating the brain and nervous system, reducing the action of the heart, and embarrassing the flow of the circulating fluids; when long-continued, it occasions paleness of the countenance, emaciation, fretfulness, impaired appetite, obstinate wakefulness, and a derangement of the functions of one or more of the vital organs; persons suffering under the depressing influences of this passion, are, like those governed by fear, strongly predisposed to attacks of prevailing epidemics. It not unfrequently causes a loss of memory, premature old age, apoplexy, insanity, and, occasionally, sudden death. Pregnant females are liable to abortion from this cause. Sometimes

this passion induces a great tendency to sleep, instead of wakefulness. A continual grief always causes more or less pernicious influences upon the constitution, which are rarely recovered from. On these accounts, sad tidings should never be communicated suddenly; a previous preparation of the mind of the individual by consolatory and moral references, accompanied by a gradual unfolding of the evils to be made known, is the better course in all cases.

Grief is one of the most difficult passions to overcome, more especially during its early violence;—when it attacks unexpectedly and powerfully, occasioning unpleasant symptoms, sleep should be induced as speedily as possible by the administration of opium, hyoscyamus, or other agents which will effect the purpose; sometimes, cool water poured upon the head will answer a much better purpose than the exhibition of internal medicines. A constipated condition of the bowels, so commonly attending this passion, should be promptly removed by some purgative medicine.

In cases of continued grief, the individual affected should not be allowed to remain alone, as solitude increases its distressing effects; the cause of the grief should not be alluded to in his or her presence, except by persons whose tone and manner are known to produce a soothing, tranquil condition of the mind; the friends to whom the cause of the passion is confided by the sufferer, should endeavor to console him, and by all the means in their power lessen his sorrows. Change of scenery, traveling, sailing, cheerful society, and every method to draw the attention from its affliction, should be resorted to. The mind of the patient should be kept constantly occupied by business, scientific investigations, reading, writing, conversations, &c. The diet should be nutritious, not heating or too stimulating, and all intoxicating draughts should be positively avoided.

Joy, when not too sudden and exciting, is a passion which rather exerts a salutary influence upon the mind and body, causing pleasurable emotions, and an increased action of the various organic functions. But when suddenly and unexpectedly aroused to an excessive degree, it is apt to occasion disease, and even immediate death; this latter effect is more to be dreaded when the joy has been preceded by some depressing agency, as grief, or fear. It frequently occasions tears, wild laughter, and pain in the region of the heart; of these the latter is the most serious symptom. When joyful news are to be communicated, the same course should be pursued as recommended under "*Grief*."

When the symptoms of joy appear to be of a serious character, it is better to arouse an opposite passion, as moderate anger, or fear, and which may be effected by suddenly dashing cold water in the face of the person, or causing artificial pain, by some prompt and unexpected action. When it occasions excessive laughter, danger may be apprehended from the rupture of some bloodvessel; the paroxysm of laughter may be overcome in the same manner as above stated, by promptly inducing a state of fear, anger, or other counter-passion.

The above are the principal passions which exert the most ordinary influ-

ences on the healthy or diseased conditions of the system; but an excess of any passion, or a continuation of passions which keep the mind, and through it the body, in a constant state of excitement, or depression, are always unfavorable to health and longevity. Thus, jealousy, hatred, malice, envy, &c., tend to destroy the pleasurable condition of the mind, render it constantly more or less excited, fretful, and petulant, gradually impair it, and, as a consequence, the physical energies from their close relation to and correspondence with the mind, suffer in proportion to the degree of mental abnormality. The mind should be kept as free as possible from any irregular action of the passions, and everything calculated to keep up a constant state of anxious thought should be avoided. No danger can be apprehended when any of the passions are kept within proper limits—but a contrary course is invariably attended with more or less danger to health or life. Persons subject to powerful or irregular action of any passion, should at once discipline the mind rigidly and vigorously; *this can be done*, and by perseverance, an undue action of the most dangerous passions can be overcome and regulated. Great care is required in the education of children, that the evil passions be not cultivated, and also that they learn how to command them. This, however, is a matter to which parents and teachers pay but little attention; whatever feelings or emotions may be produced in the mind of a child by its correction, or by other causes, are points seldom thought of, so the child is made to yield to the wishes of its governors. The very worst mode of training children, is that which causes them to lose all dependence upon themselves, to have no will of their own, to submit silently to the commands of one superior in strength, to become mere machines, thinking and acting only at the desire of others, and receiving punishment for any resistance to what their young and tender minds cannot understand, and which but little effort is made to enable them to comprehend, save by some kind of chastisement. The minds of children are generally much more sensitive and observing than those of adults, and any ill-humor, caprice, unkindness, partiality, neglect, &c., is deeply felt, and causes a pernicious influence which is very apt to be lasting and permanent. These are matters requiring the serious attention of every person interested in the welfare and education of the youth of this country.

A few words in relation to the *various occupations of life*, before I close this part of the work. The business occupations pursued in this country, vary considerably in their effects upon the system. Those which are of a sedentary character, are liable to produce affections of the lungs, stomach, or liver, according to the peculiar position in which the body is required to be held, or the influences exerted upon it by an open, pure atmosphere, or one confined, and vitiated by impure vapors, and irritating and dusty matters. Those which are carried on in the open air, calling into action considerable muscular power, are the most advantageous to health; but, even these may prove destructive to the constitution, by daily over-action of the muscles, producing great fatigue; by

the action of only one set of muscles, the others not being exercised at all, and more especially, when the body has to be kept in one constrained or unnatural position; and by improper exposures to sudden changes or unhealthy conditions of the weather. Any employment, however unhealthy it is, may be rendered less prejudicial to health, by the adoption of the measures heretofore referred to, as temperance, cleanliness, attention to diet, exercise, bowels, &c.; while on the other hand, a neglect of these important and salutary rules, will induce disease among those whose daily labors are of the most wholesome character.

A very great error exists among parents and guardians in the selection of trades and professions for children. Those who are delicate and weakly, instead of being placed at occupations which will tend to develop and strengthen their systems and thus promote longevity, have usually selected for them some sedentary profession, as painter, engraver, watch-maker, &c., which will most certainly assist in hastening the downward tendency of their systems. While on the other hand, those of robust, hardy constitutions are placed at the most active, and consequently the most healthy employments. There is no objection to this latter plan, but the former is decidedly wrong. Those of healthy, robust systems are better capacitated to follow sedentary occupations, because, their condition of health, enables them to ward off disease, and even attain long life by an attention to the proper hygienic measures in connection with their business; while the sickly and debilitated cannot attain this end, unless, with their attentions to hygiene, they have active employment in the pure, open air. The most active and healthy occupations should invariably be selected for the tender and delicate youth.

The influence of trades and occupations upon the system, ought to be much better known by the public generally than they are, in order that artisans may adopt the proper measures to protect their systems from the injuries which may be effected by their peculiar kind of employment. The following brief relation of the effects of the more common occupations, upon the system, may prove of much utility to the reader:—

Bakers are subject to sudden changes of temperature, as, from the vapors of a hot oven to a cold atmosphere, and vice versa; they are likewise deprived of much of their rest at night, especially those who make bread; they are constantly inhaling more or less dust, which is common to their trade. These various exposures render them liable to rheumatic affections, colds, coughs, pulmonary affections, and derangements of the digestive organs. There is a disease which commonly affects the hands, known by the name of "Baker's itch," and which is supposed to be owing to the irritation which the skin undergoes during the process of working or kneading dough; (See *Grocers*)—this is sometimes a very difficult affection to cure, but I have removed it in a number of instances, by the application of an ointment made of two parts of stramonium ointment, and one part of hop ointment, mixed together; a portion of this is to be rubbed on the affected part, and kept there, during the time the hands are not employed in

working the dough. I have likewise succeeded in some obstinate cases by the daily application of a saturated solution of oxalic acid—care should be taken when using this solution, to wash the hands well with water and Castile soap, previous to kneading dough. Most bakers are unhealthy and have a pale countenance, owing more I believe, to an inattention to hygienic measures than to any other fault of their occupation. This trade is only suited to robust and healthy persons.

Bookbinders may experience unpleasant symptoms, from too close a confinement within doors, or from a careless exposure to the vapors of burning charcoal used in heating the finishing tools. But when working in a well-ventilated apartment, and not addicted to intemperance or other bad habits, their trade does not dispose them to any special diseases. Persons with a tendency to throat or lung diseases, had better avoid this trade.

Braziers, and those who work in brass, are exposed to the vapors thrown off by the melted brass, as well as to the dust or filings made in working the metal. The inhalation of these may occasion pulmonary diseases and affections of the stomach; but if a proper degree of care be taken to avoid their inhalation, the trade will be found quite healthy. Flues with good draughts will obviate one of these difficulties, and wire-gauze or network worn over the mouth and nostrils will counteract the other. This trade is suitable for all persons not disposed to throat or lung diseases.

Brewers, from exposures to sudden changes of temperature, are subject to colds and rheumatic affections; but the greatest evils to which they are disposed, are those caused by the inhalation of the carbonic acid gas which escapes during fermentation, as well as by the excessive use of malt liquors.

Brushmakers are usually healthy; the principal objections to their trade are the exposure to dust from the bristles, and the vapors of burning charcoal used in heating pitch, in consequence of which, it is an unsuitable business for one disposed to throat or lung diseases.

Bricklayers are usually sturdy and healthy individuals; the only difficulties encountered by them are exposure to the immediate rays of a hot summer's sun, which may occasion sunstroke or affections of the brain, and to lime-dust which frequently irritates the eyes and the skin. Bricklaying is a suitable employment for all persons.

Brickmakers are generally a healthy sturdy, class of people; but from careless exposures to cold and damp, they are apt to suffer from rheumatism, colds, acute pulmonary affections, ague, &c.

Butchers, when not careless or intemperate, are among the most healthy of our tradesmen. This is an occupation especially suitable to the delicate, and those disposed to throat or lung disease. Those who use much animal food, are liable to diseases of the skin, scrofula, &c.

Cabinet-makers, in consequence of the improper ventilation of their workshops, and the dust to which they are exposed, are liable to affections of the throat, lungs, and stomach; if their work requires a constant, unnatural,

constrained position, the liability is increased. An attention to proper hygienic measures will render this a healthy employment.

Carvers and Gilders become diseased in consequence of the sedentary character of their business, and its being confined within doors, in addition to which, there is generally a continual bent or unnatural position of the body. Gilders and those who work much in quicksilver, are subject to severe diseases occasioned by the vapors of this metal.

Carpenters are generally healthy, when care is taken to avoid improper exposures and intemperance. It is, however, a trade requiring too much muscular action for some persons, and is particularly unsuited to those who are disposed to bleeding from the lungs or stomach.

Coachmen and stable-keepers derive no injury to health from their occupation; but they are subject to several inflammatory affections from exposure to cold and dampness.

Cooks from an exposure to changes of heat and cold and steam, as well as to excessive or improper eating, are liable to derangements of the digestive organs, various inflammatory attacks, and diseases of the face and hands.

Coopers, when temperate, are generally robust and healthy. The stooping position required in their trade frequently causes disagreeable pains in the thighs and back; and this position, aided by the noise of hammering, is apt to induce in young beginners, headache, more or less deafness, &c.

Coppersmiths are exposed to inconveniences similar to those mentioned under the head of Braziers.

Curriers are generally healthy. The trade, however, is objectionable for those persons who have occasion to continue in a curved position, as pains of the head, bleeding from the nose, derangement of the stomach, &c., are apt to be induced.

Dyers are exposed to aqueous vapors, damp, and the fumes from the various articles used as dyes, in consequence of which, colds, catarrhs, rheumatism, pleurisy, inflammation of the lungs, and affections of the eyes, are apt to attack them. It is not a suitable occupation for persons laboring under affections of the throat and lungs.

Engravers, see watchmakers.

Farmers, when temperate, are about as healthy a class of men as can be found, though from careless or improper exposures they are liable to various diseases the same as other persons. Individuals of delicate habits, or disposed to pulmonary affections, will find properly regulated work upon a farm the most salutary occupation that they can select; though, of course, they must avoid improper and unhealthy locations.

Gardeners are healthy, the only inconvenience being a pain in the lower portion of the back, caused by remaining too long in a bent position during work. It is a suitable business for those of delicate constitutions.

Glass-workers are exposed to sudden changes of temperature, to the vapors of lead, arsenic, or other injurious articles employed in their trade, and to too constant light of a glaring nature; from which may be occasioned colds, derangements of the lungs and stomach, rheumatism, inflammatory attacks,

cataracts, &c. Sudden death is by no means unfrequent among glass-blowers. Individuals disposed to throat or lung diseases, should not embrace this business.

Glue-makers, from too long stooping may have pain in the loins, but generally they are quite healthy, the only diseases to which they are liable, being those caused by improper exposure, or intemperance.

Grocers have a healthy occupation; though too much handling of sugar, molasses, &c., is apt to produce the "Grocer's itch," a disease somewhat resembling "Baker's itch," undoubtedly produced by the same cause, probably microscopic animals or acari. The treatment recommended for "Baker's itch" will be found efficacious in this.

Hatters, beside the stooping position required during work, are exposed to the fumes from the vat, and to changes from hot to cold, subjecting them to colds, catarrhs, pleurisy, rheumatism, and derangement of the digestive organs. The finger ends and nails are apt to be injured by the employment of acids. It is an unsuitable trade for those disposed to pulmonary complaints.

Iron-workers are subject to throat and lung diseases, from the dust and filings of iron which are constantly more or less inhaled; and also to rheumatism and various other acute attacks from sudden changes of temperature, the latter especially among *foundry-men*. Yet by a life of temperance and prudence, and using means to prevent the inhalation of dust, &c., as by wearing a wire gauze over the mouth and nostrils, these deleterious effects can be obviated to a great extent.

Lawyers, when engaged in active business, have a healthy profession; those only who are too sedentary are injured by it. In law, as in medicine, the varied excitements of the mind, and its proper employment, together with moderate physical exercise, are always attended with beneficial results. Persons disposed to diseases of the throat, heart or lungs, to bleeding from the lungs or stomach, or to dyspepsia, should never engage in law or theology, especially when the habits are to become too sedentary, or, on the contrary, when the lungs and vocal organs are to be too constantly and excessively employed in pleading or preaching. In the professions of law, theology, and medicine, strong, healthy, intellectual men are required, not weekly, delicate, effeminate creatures, as we find to be too much the case in the present day.

Masons, from the active character of their trade, and its being conducted in the open air, are commonly strong and healthy persons; yet their subjection to wet, and to the inhalation of minute particles of dust, lime, and stone, renders them very liable to catarrh, rheumatism, and affections of the lungs and stomach.

Millers are very subject to asthma, cough, consumption, and derangement of the appetite and digestive powers, induced by the inhalation of the dusty particles to which they are constantly exposed; they commonly have a pallid and unhealthy appearance.

Painters are extremely subject to various unpleasant symptoms, arising

from the vapors of the several lead oxides to which they are constantly exposed; vertigo, vomiting, impaired digestion, constipation, &c., are very common among them, and especially a serious disease known as *lead* or *Painter's colic*, which is apt to end in palsy or death. Intemperance hastens these effects. *Workers in lead mines* are liable to similar affections, and which are always very difficult of cure.

Paper-makers from their exposures to dampness, to the vapors occasioned by bleaching, and to the dusty particles from the rags employed in their trade, are very subject to colds, rheumatism, and diseases of the lungs and stomach.

Physicians, engaged in moderate practice usually enjoy excellent health; but when they are too sedentary in their habits, or permit themselves to worry in consequence of non-paying patients, and especially when their pecuniary means are not abundant, they are subject to diseases of the heart, and other serious affections. Physicians exposed to changeable weather, and to constant tiresome practice, not having sufficient rest, as is more frequently the case among country practitioners, are peculiarly liable to disease, and to a premature decay of the system; and the disposition to which is augmented when residing in unhealthy or malarious districts.

Plasterers being subjected to a damp atmosphere, and lime-dust, suffer principally from colds, rheumatism, lung diseases, and affections of the eyes.

Plumbers and *Potters*, are subject to the same diseases as painters, occasioned by the lead used in their respective occupations. Almost all kinds of common earthenware have lead entering into their glazed surface, rendering the ware not only deleterious to the manufacturer, but also to those who use it.

Printers are exposed to the fumes of the lead and antimony of the type, they have but little exercise, and most commonly occupy a confined or improperly ventilated room, all of which exerts a deleterious influence upon health. Swelling of the limbs, and dilation of their veins are frequently occasioned by the erect, standing position in which they are required to continue for hours. The eyes are often injured by a constant and strained employment of them upon small objects. Indigestion and diseases of the lungs, are the more common diseases among printers; and among female compositors, in addition to the above, diseases of the womb and reproductive organs, are by no means unfrequent. Pressmen, who have a greater degree of activity and variety in their labors, are not quite so liable to the above affections as compositors. Persons of delicate habits, or disposed to throat or lung diseases, or to bleeding from the lungs or stomach, as well as females who are not robust and of masculine composition, should not enter upon this occupation.

Rope-makers become diseased more from intemperance or improper exposures, than from any deleterious influences arising from their trade.

Saddlers, although confined within doors, and in stooping positions, may, by a proper course of hygiene, overcome the attacks of loss of appetite, and impaired digestion, &c., to which they are liable.

Shoemakers, from the constrained, unnatural position in which they are placed during work, and the confined, or improperly ventilated rooms which they occupy as workshops, are especially liable to dyspepsia, liver-complaints, and diseases of the lungs, the results of imperfect digestion and nutrition, and obstructed circulation. This class of mechanics should be strictly temperate, and should exercise regularly and daily at various hours, either with the dumb-bells, or at jumping, fencing, boxing, playing ball, &c.

Shopkeepers, clerks, and bookkeepers, generally suffer more from the sedentary character of their employment, than the active; the injurious influences of which are much aided by confinement within doors. Beside these, there is usually an irregularity in the time and manner of eating, from all of which they become subject to dyspepsia, muscular debility, indolence, and a general torpor of the various functions of the system. To overcome these evil influences they should exercise daily,—an attendance at the gymnasium would be especially advantageous; and among other hygienic measures, they should be particularly observant of the rules laid down in relation to food, mastication, time for eating, &c. It is a great misfortune, undoubtedly owing to a want of proper physiological knowledge, that a majority of employers require from their sedentary employees, not only all the hours of the day, but often several hours of the night, allowing them no time to attend to such duties as their mental and physical systems demand for the promotion of health and longevity; and, as a consequence, these late hours which are spared, and in which no gymnasium can be found open, nor any profitable mental or physical associations or exercises be enjoyed, are very apt to be passed in dissipation and debauchery, to the ultimate detriment of both employer and employee.

Smiths, as blacksmiths, whitesmiths, &c., are a sturdy, healthy, athletic class of men, being disposed to disease only from intemperance or improper exposures. As the muscles of the arms and upper part of the body are more thoroughly developed in smiths than those of the lower limbs, the latter should be improved by running, leaping, dancing, and similar exercises.

Starch-makers are subject to coughs, colds, and pulmonary affections, arising from exposures to damp, and from the inhalation of the dusty particles arising from starch.

Students and authors render themselves unhealthy by their own imprudences and follies; a proper attention to exercise, diet, cleanliness, hours for study and for sleep, &c., will tend not only to increase the powers of the mind, but likewise those of the body. Too close an attention to study or writing, in confined rooms, and also during the late hours of night, will induce similar unhealthy influences upon the system as those referred to under the heads of lawyers, physicians, shoemakers, shopkeepers, and tailors.

Tailors, from their sedentary occupation, and the unnatural positions which their work requires them to assume, are subject to dyspepsia, liver

affection, diseases of the throat and lungs, and a torpor of all the functions of the system. And these are more apt to be present with the youth of delicate constitutions who are apprenticed to the trade. They quickly have the functions of nutrition, respiration, and circulation embarrassed, from which result the diseases so fatal to many. Tailors should be temperate, and, as recommended for shoemakers, clerks, and others of sedentary employments, should exercise daily and regularly, either in a gymnasium or some other proper place; by pursuing a proper hygienic course, they may obviate entirely, or to a very great extent, all the unhealthy consequences of their trade; their workshops should be well-ventilated.

Tallow-chandlers are not disposed to any disease peculiar to their employment.

Tanners are commonly sturdy, and healthy, but are liable to colds, catarrh, rheumatism, &c., from the exposure to cold and damp required in their business.

Tinmen are not disposed to any particular disease, except from intemperance, or when their workshops are improperly ventilated.

Tobacconists, are apt to suffer from cough, indigestion, headache, nervousness, affections of the throat, &c., in consequence of the sedentary nature of their occupation, their confinement in close rooms, and of the inhalation of the dusty particles of the tobacco. Temperance, cleanliness, and daily exercise are necessary for the preservation of health among this class of tradesmen.

Turners are liable to the diseases common to carvers, and other trades requiring a bent position of the body, constant standing, and inhalation of dusty particles. Proper exercise, temperance, and other hygienic attentions, will obviate the disadvantages attending this trade.

Watch-makers and *engravers*, are very sedentary, are confined in their rooms, and perform their labors with the body in a bent posture; in consequence of which they are subject to dyspepsia, liver affections, constipation, piles, cough, consumption, and a general torpor of the several functions of the system. The contrast and straining application of the eyes to small objects, frequently injures the sight. To overcome these evil effects, much may be done by pursuing the course recommended for shopkeepers, students, tailors, &c.

Weavers most generally pursue their labors in damp and confined rooms, filled with dusty particles of the material they are using; in addition to this they soon assume a bent position of the body. These circumstances are apt to induce cough, asthma, dyspepsia, piles, constipation, and diseases of the lungs and throat. When temperate, and working in well-ventilated and dry apartments, and attending to exercises of amusement, &c., they may enjoy health to a good old age.

Many occupations are not mentioned herein, but enough are referred to, by which the reader will be enabled to judge of the healthy or unhealthy nature of any particular one. Thus, ascertain whether the occupation be one requiring muscular exertion in the open air, whether too great exer-

tion of the muscles is required, whether all the muscles of the body, or only a portion, are called into action, and whether the body is to be held constantly in a bent or unnatural position. Again, is the occupation sedentary, or not, requiring confinement in close rooms, the inhalation of an impure or dusty atmosphere, any exposure to steam, obnoxious vapors, cold, damp, &c? An explanation to these and similar inquiries will enable any one to select and determine for himself the healthy or unhealthy character of any kind of business.

All persons, whether sedentary or very active, require amusement and exercise, which should be taken frequently. Too much attention to business and little or no recreation, is certain to bring on a premature decay of the system. Foreigners, in this respect, enjoy themselves much better than Americans; they frequently have little parties, pic-nics, and other agreeable and healthful associations, which, undoubtedly, is one cause of the health and longevity of even those among them who follow rather unhealthy employments. When will our own countrymen manifest a greater interest than they now do, in matters pertaining to health and long life?

CHAPTER XIV.

The Microscope.—Its Importance.—Detection of Adulterations.— Microscope Makers.

BEFORE closing this part of the work, I wish to make a few remarks relative to the microscope, an instrument to which frequent reference has been made in the previous chapters. But a few years since it was looked upon as a mere toy, unworthy the attention of men of science; at this day, the many improvements which have been made upon it, render it useful equally to philosophical investigators and the public generally. Every person who is interested in matters pertaining to his own health and comfort, as well as to his instruction and amusement, should possess an achromatic microscope.

The microscope opens to the observer a new and unexpected world, full of beauty, perfection and magnificence; in a single drop of water it presents to the astonished vision, living creatures, of most beautiful and varied forms, entirely unlike all former conceptions of organic existences, and so extremely minute that it would require from twenty-five thousand to eighty millions to fill the narrow space of one square inch. And yet, as small as they are, the microscope reveals to us their existence, their spontaneous motion, and their external and internal structures; it also makes known the fact that these minute living beings are extremely reproductive, and "constitute the chief proportion of living bodies upon the face of the

earth." They are found not only in the fresh water of ponds, brooks, rivers, and lakes, but even in the salty waters of the great deep, in some strong acids, in terraqueous matter, and in vegetable and animal fluids; indeed, there is no part of the world, either upon its external surface, or internally, but in which these microscopic beings can be found, either in a living or fossil state. The mortar of the builder, the chalky cliffs of Albion, extensive tracts of country in various parts of the world, as well as chains of mountains, the coral foundation of the Polynesian Archipelagoes, of the reefs and islets of the Indian Ocean, as well as many other places, besides slate, flint, sandstone, limestone, rocks, &c., all contain, and are, in fact, chiefly composed of the remains of once living, invisible animalcules. "Of the myriads upon myriads of organized beings created to work out the grand designs of Providence, all calculation seems futile; as the result would be far beyond the grasp of human comprehension. And the remains of these minute animals have added much more to the mass of materials which comprise the exterior crust of the globe, than the bones of elephants, mammoths, hippopotami, and whales."

But the microscope does not terminate its utility here; it is equally necessary and useful to the geologist, the botanist, the mineralogist, the chemist, and the physician. To the latter in particular, it has demonstrated the minute structure of parts of the human system, which were previously altogether a mystery, and has assisted in affording a more perfect comprehension of the organic functions. The structure of the various parts of the system has, within a few years past, been thoroughly and correctly made known by the aid of this mighty instrument, so that no man can, at the present day, hold the title of even a "respectable physician," who is not conversant with its revelations. Nor has its value ceased with a knowledge of the healthy structure; it affords a certainty in the diagnosis or detection of diseases, several of which cannot be correctly determined without it.

It is no less useful to the non-professional man, and to the community in general, who, by its employment, may frequently learn certain unhealthy conditions of the system, without having immediate recourse to a physician. Thus, the character of urine, as known by its uric acid, its urates, phosphates, oxalate of lime, blood-corpuscles, &c., as seen under the microscope, may enable an individual to become aware of changes taking place in the system not consistent with health, at a very early period, even before any appreciable symptoms have developed themselves, and thus afford him information which will lead him to adopt a proper course of treatment long before the attack becomes serious or of a permanent nature. Engravings of the most common appearances of the urinary deposits under the microscope, are given in that part of the work treating upon affections of the kidneys, to which the reader is referred.

The non-professional man may also ascertain that many diseases of the skin depend upon, or are accompanied with microscopic vegetable growths, of a fungous or algous character, as ring-worm of the scalp, dow-worm,

some aphthous ulcerations of the throat, mouth, &c., and that other diseases again, are accompanied with microscopic animals, as the itch, *acarus folliculorum*, &c. The globules of blood seen under the microscope, appear as numerous "pale, red, rough, bi-concave discs, having a tendency to turn upon their edges, and to arrange themselves in rolls like rouleaux of coins; a very few white corpuscles, irregular in form, granular in surface, and rather larger than the red globules, will also be readily distinguished." To discover whether any stain consists of blood, it must be moistened with some white of egg, then scraped off the material holding the stain, and examined under the microscope; if the stain consists of blood, blood-corpuscles, as above described, will be distinctly visible. In this manner, in supposed cases of murder, may we distinguish between blood stains, and red spots resembling blood.

Fig. 12.

Beside the above named applications of the microscope, there are others of still more importance to community, as *the detection of adulterations in food and drugs*. A writer observes, "to such a pitch of refinement has the art of falsification of alimentary substances reached, that the very articles used to adulterate are adulterated. And while one tradesman is picking the pockets of his customers, a still more cunning rogue is, unknown to himself, deep in his own!



c. Blood-corpuscles cohering.
d. Blood-corpuscles separate.

"The manner in which food is adulterated is not only one of degree but of kind. The most simple of all sophistications, and that which is the most harmless, is the mixture of inferior qualities of the same substance. * * * Secondly, the mixture of cheaper articles of another kind; thirdly, the surreptitious introduction of materials which, taken in large quantities are prejudicial to health; and fourthly, the admixture of the most deadly poisons in order to improve the appearance of the article 'doctored.'

"The microscope alone is capable of detecting at one operation the nature and extent of the more harmless but general of these frauds." It distinguishes with unerring nicety an admixture of the common *Circuma* arrow root with the finer *Maranta*; it detects genuine ground coffee, from its adulteration with peas, beans, oats, dried bones, oak, or mahogany, sawdust, chicory, &c.; it determines the presence of mildew in flour; of turmeric and flour in mustard; of red lead in cayenne pepper; of water, chalk, calves' brains, molasses, annato, flour, oxide of iron, &c., in milk, as well as the richness of milk; it exposes fraudulent mixtures of lard with butter; of Prussian blue, turmeric, chalk, and copperas in green tea; of gum, black lead, Dutch pink, and leaves of other plants in black tea; of roasted wheat, beans, carrots, parsnips, horsechestnuts, oxide of iron, baked horse's liver, &c., in chicory; and of wheat flour, hundreds of sugar-insects, sand, and albumen of bullock's blood in sugar. Impurities in butter, bread, cheese, molasses, spices, vinegar, and other necessities of life may at once be detected by this

powerful instrument, so that as a saving to the pocket as well as to the health, it should form a part of the domestic apparatus of every family.

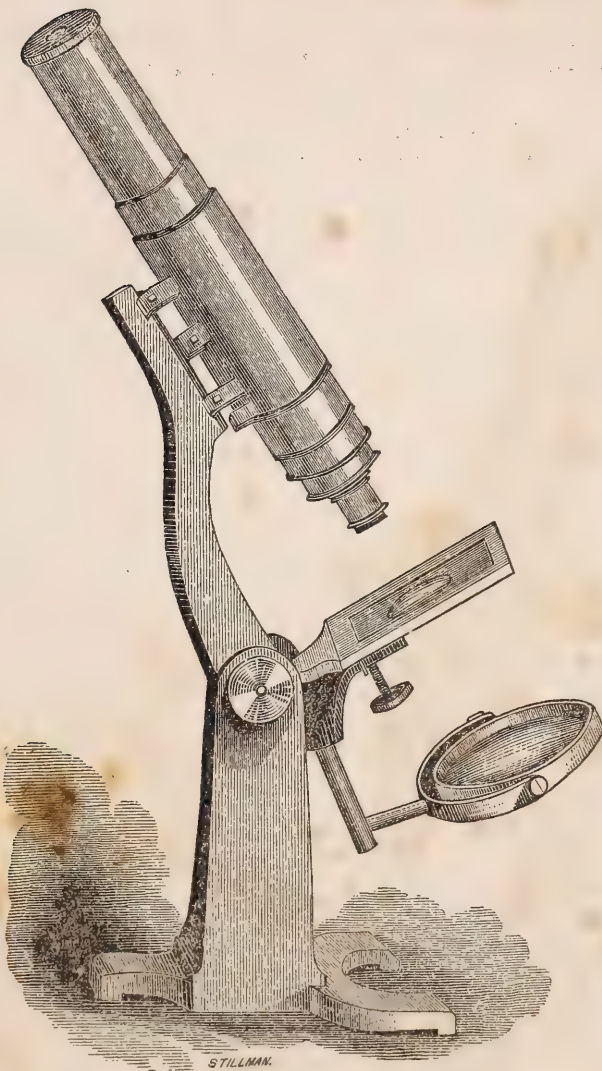
The most useful and fascinating study, is that belonging to microscopic observation, and it is much to be regretted that means have not been heretofore employed to introduce its charms and value into the homes of the people—to their firesides. A more valuable gift from father to son, from husband to wife, from friend to friend, than that of a microscope, cannot be made; for, unlike any other instrument, it can bestow upon its possessor, amusement, profit, instruction, health, and happiness. Its astonishing and magnificent revelations are of so bewitching a nature, that the parent, the son, or the man of common sense, who has once become fairly acquainted with them, would rather pass his unoccupied hours at home, in the circle of his family, displaying to its members the powers and excellencies of his microscope, thus cultivating in their minds a taste for scientific pursuits, than to waste those hours away from home in the turmoil and strife of political excitements, in the mind and soul-destroying region of a porter-house, or, in any of those many dens of dissipation, debauchery, and vice, which throw out the most alluring temptations, to catch the indolent, the unwary, the careless and the ignorant; to rob wives of the affections of their husbands, to make sons rebel against and cause anguish to their parents, despoil wives and daughters of all self-respect, and render them among the vilest of the vile.

Unfortunately, some have conceived the microscope to be a mysterious instrument, capable of being managed or understood only by certain particular persons. This, however, is a great error; it is intended as an improvement upon our sense of sight. Objects which can be seen well by the natural eye, do not require its assistance; but with those which are too small to be thus seen, we aid the power of vision by employing the microscope, and which every individual possessed of sight can readily use. Persons with imperfect sight, use spectacles to improve this sense; and the microscope improves the magnifying and defining powers of the eyes.

A great obstacle to the more common use of the compound achromatic microscope, heretofore, has been in its expensiveness, but instruments are now made by our best opticians, called "student's microscopes," which will accomplish all that any person need desire. The value of a microscope does not lie so much in the beauty or workmanship of its brass mountings and other metallic accompaniments, as in the quality of its object-glasses and eye-glasses. An object-glass itself, however great may be its magnifying power, is useless unless it possesses penetrating and defining powers also. It is from a want of these latter powers in their objectives, that the French microscopes imported into this country are inferior in quality, notwithstanding the excellence of their brass-work and their low prices.

In purchasing a microscope, the name of its manufacturer ought always to be learned, from the fact that our best microscope makers never permit poor glasses to leave their workshops. Among the first microscope makers of England, are Ross, Powell & Lealand, Smith & Beck; and, perhaps, Pillischer, but their instruments seldom reach this country unless ordered, and are very expensive.

Fig. 13.



Spencer's Student's Microscope.

The best microscopes in the world as to magnifying power, large angle of aperture, definition, and penetration, are made in this country in Canastota, N. Y., by the firm of Spencer & Eaton; their largest microscopes are unequalled by any known. This firm manufacture a "student's microscope," (See Fig. 13,) with one eyeglass, and two object-glasses inch and quarter-inch, for \$53, and which is sufficient for all the various purposes referred to above. The instrument is so made that as the purchaser's means will allow, he may procure the higher powers, polariscope, diaphragm, &c., should he desire them. The inch objective is about 60 diameters, or magnifies the object about

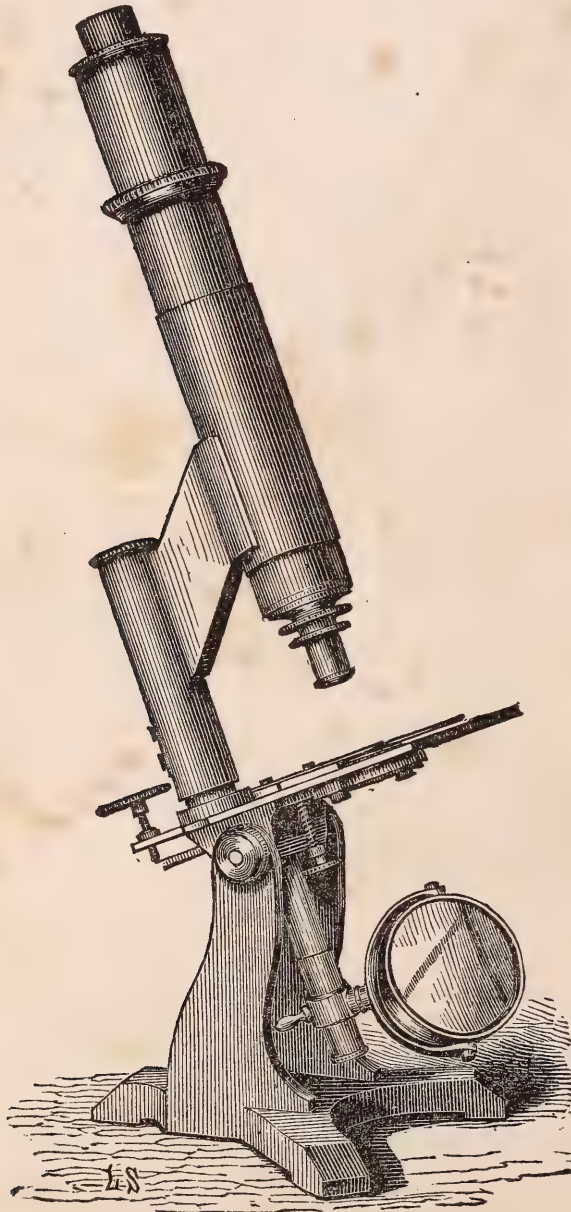
3,600 times superficially; the quarter-inch is about 300 diameters, magnifying the object 90,000 times superficially. If the quarter-inch objective only is taken, the price is \$30; but all who are able should procure both objectives.

Messrs J. & W. Grunow, of New Haven, Conn., make excellent microscopes, which have thus far given satisfaction to all who have used them. In this country, I believe they stand second, only to the above firm of Spencer & Eaton. They also manufacture "student's microscopes," with inch and quarter-inch object-glasses and two eye-glasses, for \$55, giving magnifying powers of about 30, 50, 200 and 350 diameters.

The above instruments of these two makers are mounted each on a tripod base, and uprights of japanned cast-iron, with joint to incline the body at any

angle desired; the stage is large, and plain, with a spring clamp to hold the slides containing the objects, and each instrument is provided with a concave mirror. (For manner of using the microscope, description of microscopes, &c., see "*The Microscopist's Companion, or a Popular Manual of Practical Microscopy, &c., by J. King, M. D.*")

Fig. 14.



Grunow's Student's Microscope.

PART I.

SYMPTOMS, CAUSES, AND TREATMENT OF DISEASES.

FEBRILE DISEASES.

SYMPTOMS. There is no class of diseases so frequently met with, nor to which the human family are so subject, as this of Fever; which is, probably, owing to the fact that they are more or less constantly exposed to those *causes* producing fever, as exposures to cold, or sudden changes of temperature, damp atmosphere, great heat, noxious vapors from decomposing animal and vegetable substances, unhealthy emanations from diseased persons, &c. Let the character of the fever be what it may, there are certain *symptoms* common to all forms of febrile disease, and which vary only in their degree of severity, depending upon the activity of the attack. Thus, the first symptom experienced, is most commonly a degree of languor and lassitude, an inaptitude for mental or bodily exertion, sometimes a dull headache, unsound sleep, unpleasant dreams, and other symptoms of depression. In a few instances, these precursory symptoms are wanting; but when present, they may remain for several days, or even weeks before any further indications of fever are manifested,—and it will most generally be found, that the duration of these early symptoms will be proportioned to the severity and obstinacy of the subsequent febrile affection. Not unfrequently, as the above symptoms gradually increase, the patient will experience an unpleasant soreness and lameness over the whole system, which he will express to be an “aching of the bones.”

In a longer or shorter time these symptoms will be followed by chills, at first passing down the back, with cutis anserina (*goose pimples*), and paleness of the surface, and the patient places himself as near a fire as possible, but without being in any way benefited by so doing. These chills may be very slight, or may amount to a severe shaking of the whole body, over which the patient has no control, and in severe cases will be accompanied with blueness of the lips and nails, hollow appearance of the eyes, and the previous soreness and aching complained of, are now supplanted by a distressing pain. With the chills a great degree of thirst is usually experienced; there will be a hurried and more or less difficult breathing; the pulse will be small and depressed, but very frequent; sometimes it will be small and feeling like a thread, at others it will be barely distinguishable. The tongue, at this period of the disease, is pale, with a white coat on its upper surface of greater or less consistency. Sometimes nausea and vomiting are present; the urine is generally abundant and colorless. In some forms of fever, and especially

at the South, the depression accompanying this stage is so great as to occasion the death of the patient in the first, second, or third chill.

The duration of the chill varies with the character and severity of the attack, and the resisting capability of the patient's constitution, and is followed by the hot stage, in which those symptoms are developed, which, taken together, are termed "fever." These come on gradually, the breathing becomes more natural, the blood returns to the veins and capillaries, as manifested by the flushed cheeks, and the disappearance of the sunken and hollow expression of the eyes and countenance generally; the surface and extremities become warm, and the heat continues to increase so as to impart a sense of pungency when the attendant's hand is applied to the surface, but the skin remains dry. Occasionally instances are met with in which the hot stage is accompanied with profuse perspiration. The pulse varies from sixty to one hundred and twenty beats in a minute; it may be full and bounding, soft and compressible, hard and wiry, &c.; the mind is more or less sprightly and excited, sometimes amounting to a transient delirium; in the higher grades of fever there will be seen and felt a powerful pulsation of the arteries along the neck, (carotids,) with a determination to the brain, a hot and painful sensation in the head, restlessness, wakefulness, delirium or a constant disposition to drowsiness. Frequently, the senses of taste, smell, hearing, and even feeling, become very obtuse. Thirst is generally present, and when it is not, I look upon the disease with a degree of uneasiness, as I consider this symptom a favorable indication; the appetite, as well as the digestive functions are impaired; the mouth is commonly dry and parched, sometimes it remains moist; the tongue becomes of a deeper red than in the previous stage of chill, and its surface is at first coated with a thick, white, clammy substance, which gradually changes to a yellowish-brown, or even black; sometimes the surface of the tongue, as well as its body, will be unnaturally red, with a dry and parched condition of the mouth; the teeth, not unfrequently, are covered with a dark-colored sordes; the urine is diminished in quantity, high-colored, and of a peculiar odor; and the bowels are generally constipated, though frequently they will be loose, approaching to diarrhea.

The fever, after a certain duration, gradually subsides, the patient becomes easy and free from suffering; the pulse becomes more natural, the skin soft and moist, or, the perspiration may be copious; the appetite returns; the urine becomes more abundant, and the functions of the various organs of the body are gradually renewed. In intermittent fevers this last stage may continue for a definite number of hours, to be followed successively by the various cold, hot and sweating stages, until a cure has been effected by medicinal measures. And, in other forms of fever, the hot stage, instead of terminating in the above condition, may pass into a state, known as the "typhoid stage," and which is frequently, but incorrectly, considered to be a *typhoid fever*.

CAUSES. There is no class of diseases, the nature of which has given rise to so much speculation and hypothesis as that of fevers. And, notwithstanding the untiring investigation of the most eminent men in the profession, for several centuries past the true character of fever still remains to be determined. The exciting cause of this class of maladies has already been briefly referred to at the commencement of this article. The immediate cause may require a few words of explanation.

In a work like the present, any lengthy remarks in relation to points of discussion in the medical profession, would be entirely out of place, for such matters should be laid only before medical men for their investigation, and

not before the people who cannot be expected to bestow that rigid attention which such subjects require, and who, in fact, adapt their ideas of medical matters to the prevailing hypotheses of the profession. I will, therefore, give, as briefly as possible, my own view of fever, leaving its correctness or incorrectness to be decided hereafter by careful examination.

An opinion has lately gained ground that fever is a "healthy effort of nature" to remove from the system some deleterious agent, and for some years I adopted the same view. A mere superficial glance at the course and symptoms of fever, would, undoubtedly, lead one to suppose that this idea was really correct, but on a closer and more careful inquiry, it will be seen that there is no foundation for it. As well might we call the effort made to remove a heavy load from one's back, or the blow following a deep insult, a healthy effort of nature, as fever. Nor can I conceive how any abnormal action taking place in the system, can be regarded as a healthy effort, whether that action be one of depression, or of excitation. But I will not dwell upon this point.

In the human system are manifested three actions, viz: vital action, chemical action, and electrical action. *Vital action* is an effect of that unknown agency by which life is sustained, and from which results mind, sensation, voluntary and involuntary motion, and reproduction; this action is perfect only when the chemical and electrical actions of the system are also perfect. It may be a separate and distinct action, or it may be the result of a proper combination of the chemical and electrical actions of the constitution. *Chemical action* is an effort of those laws which give constitution, cohesion, density, &c., to the various tissues of the system, and from which results heat, the property of being acted upon by external and internal agents, powers of regeneration and decay, &c., and which, in the animal system, leads to dissolution of all its parts when not preserved in a proper condition by the vital action. *Electrical action* is a result of, or is connected with chemical action, in which, during the processes of composition and decomposition of the various animal tissues, electricity is developed to be either retained in the system or set free, and which in many of its actions bears a close analogy, almost amounting to absolute identity, with vital action; it, likewise, frequently answers as a substitute for vital action, preserving health and life in instances where this latter action is impaired. There is no doubt, in my mind, that it is also intimately connected with vital force, but of this we have no positive data. Polarization of various organs, growth, &c., depend upon this action. Health consists of an equilibrium or correct proportion of these several actions in the system, and when there is a derangement of this equilibrium, or a departure from this proportion, disease or death ensues.

Fever is a disease of the fluids of the system only, which may be caused by retention of those decomposed and unhealthy particles which should be eliminated through the various excretory organs of the body, or by the presence of foreign and noxious matters circulating with the fluids, which have been introduced into them, either by absorption, inhalation, or during the nutritive process. These morbid agents, whatever may be their nature, produce a depressing influence upon the vital force, which is known as the first or cool stage of fever; and the degree of this depression is proportioned to the malignancy or venomousness of its cause and the capability of resisting power of the vital force. All the various functions of the system, become impaired or suspended, in proportion to the depressing influences, and when these influences are very noxious, the patient usually dies in this stage.

As the vital action of the system is depressed, the chemical action preponderates, and the various tissues involved in this disease undergo chem-

ical changes, according to the reduction of their vital energy; the blood, nervous system, and brain, more especially suffer from these changes. Thus if there be, so to speak, two degrees of depression, there will be a subsequent chemical action of two degrees exerted upon those parts whose vitality is reduced the most. But this chemical action, in the first place, evolves heat and electricity, as we find to be the case with nearly all chemical action; and the electricity being one of the best substitutes for vital action with which we are acquainted, assists it in sustaining the brain and nervous system from the more deadly influences of the chemical decompositions going on, and thus preserves the system from immediate decay, until the normal function of its various organs are restored.

In the next place, the chemical action increases the amount of carbon or other combustible elements in the blood, to be consumed by the oxygen, which consumption contributes to augment the temperature of the body. And from this action results fever, and its various symptoms, from which the patient recovers more or less rapidly, according to the degree of pernicious influence exerted upon the system, the degree and kind of chemical action produced, and the capability of the vital force to resist or subdue this influence.

The character of the poison circulating in the fluids determines the peculiarity of the fever; thus, a poison which exerts a constant influence, produces what is termed a "continued fever," and the less constant the influence the more marked will be those symptoms termed "remittent, intermittent, or periodical."

This is, in brief, my own view of fever. The data upon which it is founded, as well as remarks bearing upon objections or inquiries that may be made in relation thereto, would hardly interest the popular reader; but, the physician who has kept himself posted up with the discoveries in medical science to the present date, may perceive in this view, at least, an approach toward the truth, and may by dint of a little reflection, be enabled to satisfactorily solve the various difficulties which may present themselves on several points connected therewith.

The *prognosis* of fevers depends upon the symptoms present. When they are complicated with other affections, they are more or less unfavorable, according to the character and severity of the complication. Congestion of internal organs is always dangerous according to its extensiveness. When the symptoms of a fever are mild, the disease is more favorable than when they are severe. When a fever does not readily yield to treatment, but runs into the stage of prostration, it is very unfavorable. The more distinct the remissions or intermissions, the more favorable is the prognosis, while obscure or hardly appreciable remissions are indicative of danger.

GENERAL TREATMENT OF FEVERS.—In the treatment of all fevers the most important indication, is to restore the excretory organs, as the skin, kidneys, and bowels, to a healthy condition, and for the production of which, physicians have found two modes of medication more commonly successful. The one is, to make use of those means, which will arouse the various excretory organs, to a state of action, as by vomiting, purging, sweating, &c., and thus cause the morbid agents to be eliminated from the system. The other is to administer agents having a neutralizing influence upon the morbid matter, as Sulphate of Quinia in intermittent, bilious, and typhoid fevers, aided in most instances by medicines which allay nervous irritation, and produce relaxation. In many cases, the action of the latter relaxing agents alone, will overcome the fever, in consequence of their influence upon

the nervous system, producing in the excretory organs a condition favorable to the removal of all unhealthy agents from the circulation.

A few remarks relative to the first named method above referred to, may not be inappropriate at this place. In many instances, an *emetic* exhibited at the onset of a fever, will break up the disease at once. This beneficial result arises not so much from the cleansing of the stomach thereby produced, as from the stimulating shock imparted to the whole system, which arouses in the several organs a degree of activity sufficient to enable them at once to remove the unhealthy poisonous material. It is more especially in the early stage of fever that emetics are found the most useful; yet, when judiciously administered even in the advanced stage, they have frequently been followed by the most happy results. It is very seldom, however, that our practitioners of the present day administer emetics in fever, from the fact, that recent additions to the *Materia Medica* and improvements in treatment, have caused them to be nearly set aside. Still cases are occasionally met with, in which their exhibition is demanded, as when there are accumulations in the stomach and bowels, and when there is great want of nervous action.

When an emetic is to be administered to an adult, one of the following compounds will be found to act promptly and without any unpleasant consequences:—

The Compound Powder of Lobelia, of which the dose is about half a teaspoonful in a small quantity of infusion of Boneset, and it should be repeated every fifteen minutes, for three or four times in succession, until it has produced free emesis, or given a proper shock to the system. Its operation will be very much facilitated by causing the patient to drink freely of a warm infusion of Boneset. I consider this preferable to the Compound Acetated Tincture of Bloodroot, which is used by some practitioners. The dose of this tincture is a tablespoonful every ten or fifteen minutes until vomiting is produced. A child six years old may take a teaspoonful for a dose; but for children I prefer the Compound Tincture of Lobelia as an emetic. To a child a year old, the dose is half a teaspoonful in a tablespoonful of warm water and molasses, and which may be repeated every ten or fifteen minutes, until it vomits. A child from two to six months old may take from half a teaspoonful to a teaspoonful for a dose; and one less than two months old, from ten to twenty-five drops.

Purgative medicines are generally of the greatest utility when given at the commencement of fevers; occasionally they are useful during the progress of the disease, but care should always be taken not to greatly prostrate the system by too active cathartising. The beneficial results obtained from purgatives in febrile cases, are owing to a removal of morbid accumulations in the alimentary canal, as well as to their revulsive influence, from which the functions of the liver, skin, and kidneys are promoted; there being an intimate relation of action existing between these various organs, by which the augmented or depressed action of one exerts a corresponding degree of action in all the others, and through them upon the whole system.

Yet it must not be forgotten that while the poisonous matters causing the fever remain in the system, no permanent good can be derived from purgatives alone; and, in many instances, as in intermittent, bilious and congestive forms of fever, even when the bowels are torpid, more benefit will be obtained from one or two doses of Sulphate of Quinia or other indicated remedy, than from the use of purgatives, whether exhibited only once or for several days together. Though, it may be proper to remark, that the

Quinia is frequently apt to produce more decided and marked results, when preceded by an alvine operation. But in urgent and serious cases, it is better to omit the purgative and exhibit the Quinia at once, as much valuable time may be lost by waiting for a catharsis. The use of Sulphate of Quinia in fevers, originated with the late Dr. I. G. Jones of Columbus, who had for years observed the malarial origin and periodic character of the generality of fevers, and to whom, not only the profession, but mankind at large, are deeply indebted.

There are some practitioners who discard the use of purgatives not only in the treatment of fevers, but in every other class of disease, and, as I think, without any good reasons for so doing; indeed, I have frequently been called to patients previously attended by this class of physicians, who, after having suffered severely from their sickness, without any tendency toward recovery, were promptly benefited by the administration of a cathartic. And I have known similar results to happen in the practice of my medical friends, in numerous instances. It is true that purgatives must be exhibited with a proper care, adapting their operation to the strength and condition of the patient, being extremely careful how we employ them in diseases in which there is tendency to rapid dissolution with excessive prostration; but, at the same time, it is equally true, that in active diseases, as a general rule, these agents are not only useful, but frequently indispensable. It is by no means an uncommon occurrence, to find that other means which may have been pursued in the treatment of fever, produce more marked and prompt results after the action of a purgative dose of medicine, than before. The best and most successful physicians of the present day, are found to be those who do not hesitate to prescribe cathartics in all cases where they are indicated.

In the early periods of fever, purgatives may be administered every day, or every two or three days, if required; but there is no necessity for active purgation after the evacuations of the first day; one or two moderate discharges on the subsequent occasions will be found sufficient. And this is more especially necessary in typhus and continued fever, when there are no contra-indicating symptoms present. In many cases of fever, a cure can be effected, without a particle of cathartic medicine. I am aware that some practitioners treat their febrile patients with daily heroic doses of cathartic medicine for some days in succession, and that the patients recover; but, I likewise know that many patients are lost by this course of medication, and, that among those who recover, many are left with some permanent chronic affliction. The scientific physician proceeds with care and prudence, in all cases husbanding the vital force as much as possible, and avoiding the production of all unnecessary irritations either in the intestines or elsewhere; the charlatan, (whether he have a diploma or not,) prescribes indiscriminately and at random, expects to satisfy the patient and friends that he is really doing something by his active measures, and though he may effect some good in a continued course of practice, he unfortunately accomplishes a much greater amount of evil.

Among the purgatives more commonly administered in fevers is the Compound Powder of Jalap, known universally by the name of "Antibilious Physic,"—the dose of it is a drachm, or a teaspoonful. Many persons add a small portion of some aromatic to it, for the purpose of preventing griping, which it sometimes causes. Thus, a few grains of Ginger, Cloves, Capsicum, or Peppermint, may be added to the dose for that purpose. The powder is usually added to boiling water, which, when cold, is well agitated, and the whole contents taken at a draught. When not contra-indicated, it

may be exhibited in cider, coffee, lemonade, aromatic infusions, &c. In febrile diseases, ten grains of Cream of Tartar added to the dose, will frequently improve its influence. Weakly persons, females, and children, will take less for a dose, according to their age, or strength.

Podophyllin is also frequently prescribed as a cathartic, either alone, or combined with Leptandrin. Its dose for an adult, is, from one-eighth of a grain to a grain, (as its action is more powerful on some persons than others;) or, to each dose may be added half a grain or a grain of Leptandrin, and if necessary, ten grains of Cream of Tartar.

Diaphoretic or *sudorific* medicines are beneficial in the treatment of fevers, in which class of maladies, the functions of the skin are always more or less deranged. The greater part of the effete matters found in the system is eliminated through the skin by sensible or insensible perspiration. The surface of the skin itself is very extensive, and this covering bears a very intimate relation to the several organs of the body, so much so, that any derangement of its functions is certain to be followed by impaired action of one or more internal organs. Hence, if from a suspension of the skin, the noxious substances causing and caused by fevers, and which should be removed through the perspiratory vessels, are retained in the circulation, we can readily perceive the immense amount of injury thereby effected, as well as the great advantages to be derived from a restoration of these functions. Indeed, experience has proven that, the production of perspiration in febrile patients, is followed by an abatement of all the symptoms; and physicians always prognosticate favorably in fevers, when the skin is found moist and soft, with a natural temperature,—and unfavorably when this condition cannot be produced.

Diaphoretics act not only by causing a determination to the surface, removing its constricted condition, promoting the healthy action of the perspiratory vessels, and thereby causing an evacuation of poisonous matters through these vessels, but they, in consequence, lessen the great irritability of the nervous system, producing relaxation of nervous and muscular action, thus diminishing the excitement or exalted condition of the heart and arteries. It is much better and more scientific treatment, to deplete through the perspiratory vessels of the skin, than by opening a vein with a lancet; the former removes only noxious substances and those of no farther use to the system, the latter removes the very essence of life, taking away the good and the bad together, and producing an evil influence upon the nervous system and brain, which is seldom permanently recovered from.

Diaphoretics are generally the most beneficial during the first days of fever, though, it is always desirable to maintain a moderate degree of moisture throughout the whole of the febrile stage. But, in no case of fever, is violent, excessive sweating admissible, for debility and death may be as certainly caused by an improper degree of perspiratory action, as by undue venesection.

The means employed for the purpose of restoring the functions of the skin are various, and are divided into external and internal. The external are, warm water, cold water, and the spirit vapor bath, or such other vapor bath as may be preferred. The warm water acts by relaxing the skin and removing its constriction; usually, some alkali is added to it, in sufficient quantity to form weak ley, as soda, saleratus, wood ashes, &c., and which removes from the surface, any viscid or sebaceous matter which may aid in obstructing the pores. The whole surface of the body and limbs is to be bathed in this weak ley, which may be done by raising the bedclothes and washing one side of the patient's surface from the neck to the feet with

a sponge or flannel moistened with the fluid, then after drying, the patient must be turned, and the bathing repeated on the opposite side. This bathing should never be omitted in febrile diseases, and may be repeated one, two, three, or four times a day, depending upon the violence of the heat, the severity of the pain in the head, and the degree of dryness of the skin. Sometimes a small quantity of alcohol or whisky is added to the ley, for the purpose of increasing its stimulant action. The spirit vapor bath, described in part III., acts similarly; the heat determines to the surface, relaxes the constricted condition of the skin, restores capillary action, and, aided by warm diluents, promotes free perspiration.

Among the internal means are numerous agents, among which may be named the Diaphoretic Powder, (Compound Powder of Ipecacuanha and Opium,) the Sudorific Tincture, (Compound Tincture of Virginia Snakeroot,) Ipecacuanha, &c., which are used either alone, or in connection with a free use of cold water internally, or various warm infusions, as of Catnip, Sage, Balm, Spearmint, Pennyroyal, Crawley, &c. For the proper method of administering these medicines, or their compounds, the reader is referred to part III., as well as to the various forms of disease in which they are recommended.

Another very important class of agents in the treatment of fevers, is that of *diuretics*. The functions of the kidneys are generally impaired or suspended, so that the urine is very scanty, or altogether suppressed. The retention of those matters which should be eliminated through the kidneys, are of themselves sufficient to produce death, as witnessed in cases of *ischuria renalis*, in which death has occurred in from thirty-six to forty-eight hours after the kidneys have ceased to eliminate urine. And when the presence of these urinary elements in the circulation is combined with the other morbid principles causing the disease, or produced by it, the serious consequences to the patient can readily be comprehended. It is therefore of much consequence, to restore and maintain, as much as possible, the function of the kidneys, if for no other purpose than the disengagement of the urinary elements from the circulation. It is frequently the case that febrile maladies terminate favorably by a spontaneous urinary discharge; in which is usually found other elements than those peculiar to healthy urine. And when the fever is not cured by a urinary evacuation, we find, in most cases, at least a diminution of nervous, muscular, and arterial excitement. The peculiar diuretic agents to be administered, will be named in the treatment for each form of fever.

It will be observed under the treatment hereafter laid down for each form of fever, that I prefer a combination of the two modes referred to above in the first paragraph after "General Treatment," which I have found to be more generally efficacious than a rigid adherence to either one separately.

AUXILIARY TREATMENT. During the treatment of febrile diseases, it is very important to relieve certain symptoms when they become painful, or of a serious nature. Thus, there may be a very severe and distressing *pain in the head*. For this, Mustard poultices should be applied to the soles of the feet, having first, in all cases where the condition of the patient will allow, bathed the feet for fifteen or twenty minutes, in warm ley water, and then dried them. In very obstinate pain, a Mustard poultice may also be applied to the back of the neck, and even along the whole course of the spinal column, permitting it to remain until a redness of the skin, but not blistering, is produced, when, if necessary, its situation may be changed. In children under three years of age, bruised Garlic or Onions may be substituted in nearly all cases where Mustard poultices are recommended or indicated, and

in many instances they will be found to answer a much better purpose. The head and temples may also be bathed with cold water or vinegar; or warm water may be applied, evaporating it by fanning the parts; or the Cooling Lotion may be frequently applied to the head on a compress of muslin or linen cloth; using it cool or tepid, as found to be the most serviceable.

When there is much *pain in the stomach*, or *bowels*, or when they are *swollen*, a fomentation of bitter herbs, as Tansy, Hops, Boneset, &c., steeped in equal parts of vinegar and water, may be applied over the affected part, as hot as the patient can bear, and which should be changed frequently, not allowing it to cool. When this does not answer, a Mustard poultice over the part, allowed to remain until considerable redness has been produced, followed by the above fomentation, will, in most cases, afford relief.

For *nausea*, or *vomiting*, an infusion of Spearmint, Peppermint, or Horse-mint, may be drank. In some cases a solution of saleratus, or bicarbonate of soda, given in tablespoonful doses, and repeated every fifteen or thirty minutes, will be found effectual in allaying the difficulty. An infusion of powdered oatmeal browned like coffee, or of parched corn, will frequently check vomiting. Sometimes in addition to the above means, it will become necessary to apply a Mustard poultice over the stomach.

When there is *soreness of the mouth*, or *throat*, they may be frequently washed or gargled with a decoction of equal parts of Sage and Hyssop, sweetened with Honey, and a small proportion of Borax added; or, a decoction of the Prim or Privet leaves may be used similarly with benefit. In some cases, the application of Opodeldoc, or common Hartshorn liniment, to the throat, two or three times a day, followed by a fomentation of Hops and Mullein leaves, will be found an excellent addition to the above measures.

When there is *gangrene* or *mortification of the inside of the mouth and face*, as sometimes happens in scarlet fever, &c., and more especially in those cases where Mercury has been employed, the mouth should be frequently washed with yeast, and a poultice of Slippery Elm bark and Wild Indigo leaves kept in constant application. Or, a wash may be advantageously used, composed of a strong infusion of equal parts of Golden Seal, White Oak bark, and Sumach berries.

For *suppression of urine*, a warm fomentation of Hops and Vinegar may be applied over the region of the bladder, and a strong infusion of the Marsh-mallow root two parts, Spearmint one part, should be drank freely. Among children, bruised Garlies or Onions, will be found more efficacious than the above named fomentation.

For *troublesome cough*, a decoction of Hoarhound and Pleurisy root, equal parts, sweetened with Honey, may be given. In cases where there is much mucus or phlegm, the Compound Tincture of Lobelia may be administered. When there is much fever, with a scanty discharge of urine, and a cough accompanying, equal parts of Lemon juice, Sweet Spirits of Nitre, Honey, and Sweet Oil, will prove very efficacious, in doses of a teaspoonful several times a day.

When there is *great debility*, *prostration of strength*, *pulse low*, or *weak and rapid*, Wine, pure, or in the form of sling, or whey, Brandy, &c., should be promptly given. In the continued forms of fever, or in typhoid conditions, when in the latter stage there is low delirium, the patient being hardly aroused by shaking and loud calling, with rapid, fluttering, but weak pulse, twitching of the tendons and cold extremities, in addition to the internal use of stimulants, external measures must be promptly pursued. Mustard poultices must be applied to the legs, from the knees to the feet, and the

parts should be surrounded by hot bricks, rocks, or bottles of hot water, and which must be persevered in until reaction comes on. If these cannot be readily obtained, cloths wet with warm water, in which considerable salt has been dissolved, will be found an excellent substitute; they should be renewed every hour or two. At the same time, cooling applications must be made to the head, and, if necessary, the hair must be removed with the scissors.

The Saturated Tincture of Prickly-Ash berries, will, in the form of an injection, be found a very useful stimulant to the whole system; for an adult, a tablespoonful of the Tincture, may be added to an equal quantity of Ale, Porter, Brandy and water, or mutton tea, &c., and given as an injection,—if the patient cannot retain it, the nurse or some assistant, by pressing against the anus with a compress of folded muslin, will be able to detain it in the bowel for any length of time. This injection should be repeated every half-hour, or hour, according to the exigencies of the case.

When *diarrhea* comes on with the sinking stage, Opium or Laudanum may be administered in proper doses, with the Wine, or Brandy exhibited to the patient. An infusion of White Oak bark drank freely, bathing the surface often with it, will likewise be found very useful in all cases of fever accompanied with diarrhea. Ten drops of the Tincture of Muriate of Iron in a wineglass half full of water, is also useful in this kind of diarrhea.

When *putrid symptoms* manifest themselves, a mixture of Sweet Oil and Yeast, equal parts of each, may be administered in tablespoonful doses, several times a day. Or, Charcoal may be given in an infusion made by steeping three ounces of Elm bark, and half an ounce of Wild Indigo root, in four pints of water; of this, one fluidounce is a dose, to which a teaspoonful of the Charcoal may be added.

The *condition of the tongue*, must be particularly observed. In the first stage of chill, or depression, it will generally be found pale and moist; when the fever commences, there will be more or less of a white coat upon its upper surface, which is sometimes complicated with other appearances. As a general rule, the following indications will be found correct:—

1. A white fur, body of the tongue pale, indicates a mild degree of fever, and particularly if moist.

2. White fur, sides of the tongue red, indicates inflammation of some portion of the alimentary canal, more commonly the stomach. If the tongue be dry, the inflammation will be more intense. In this case, Mustard poultices should be applied over the region of the stomach and abdomen, followed by fomentations and frequent bathings of the body. Cold water may be drank freely, or an infusion of Slippery Elm bark and Peach leaves; the Tincture of Gelseminum, Aconite, &c., may also be exhibited as hereafter laid down.

3. White fur, sides of tongue slightly red, febrile pulse, with chills and intermissions, not amounting, however, to a positive intermittent fever, indicates great torpor of the biliary organs, with a disposition to active inflammation of some portion of the alimentary canal, and the disease is apt to prove tedious and troublesome. Emetics are useful in this case. But the difficulty may also be overcome by doses of Quinia and Gelseminum, without emesis.

4. A white fur, with a circular or oval portion of the center of the tongue red, and sometimes its edges and inferior surface, indicates inflammation of the stomach and spleen, in proportion to the redness manifested. Treatment as above in No. 3.

5. The upper surface of the tongue white, with the exception of its central portion, especially toward the root, which is covered with a brown or yellow fur, pulse small and quick, indicates a disposition to debility, or a

typhoid state. Bitter tonics and stimulants are to be preferred, and occasionally saline laxatives, as Seidlitz water. This appearance is sometimes met with in patients who have a tedious convalescence, though the tongue will be more natural.

In the last stage of fever, when the liver has been aroused to action, the fur on the tongue gradually becomes brown or even black, or it assumes a red appearance. If it be permanently coated brown or dark, unlike many physicians, I pronounce my patients safe—though it may be proper to state that if, in this condition, cold water or acid drinks be not craved, the case is a serious one, indicating a great loss of vital force. When these are craved I permit my patients to use them freely, as tamarind water, lemonade, orange-juice, lime-juice, cider, and even vinegar. As soon as the tongue loses its dark coat, and assumes the white, acids must be omitted, and if convalescence ensues, mild bitter tonics should be exhibited. The acids neutralize the acrid alkaline quality of the matters first secreted, as the biliary and digestive organs recover their functions.

When the tongue is red, moist, and presenting an appearance of rawness on its surface, it is indicative of inflammation of the mucous coat of some part of the alimentary canal; when red, dry, and chapped, the inflammation is intense, with perhaps ulceration, or a disposition thereto. Aphthous ulcerations of the tongue, mouth, and lips, on the subsidence of the inflammatory symptoms, indicate a fatal termination.

I have often had patients in the last stage of fever, when their tongues were coated very dark, who, when asked if they preferred to drink lemonade, or cider, &c., would quickly brighten up, and eagerly exclaim, "Yes, yes, but I would not ask for it, Doctor, expecting you would not allow me to have it." And how truly thankful were they for a beneficial medical agent, to which they were irresistibly prompted by the natural demands of the system. I am aware that many authors recommend acid drinks in febrile diseases; not, however, as a remedial agent, but as a harmless, pleasant, and grateful beverage, and principally from the fact that patients almost invariably crave such drinks; I believe, however, it has never heretofore been advised upon the above grounds. It is during this stage that death so often results in that practice which has debilitated the system by excessive bleedings, and which forbids the use of water or acids when they are imperatively required, thus surely rendering fatal, a disease which could have been brought to a successful termination by proper management.

The incessant and earnest entreaties of a patient, for any particular article of food or drink, *if steadily persevered in*, may, as a general rule, be safely indulged, whether the use of it agrees or not with our preconceived ideas on the subject. It has frequently been the case that much benefit has ensued, by allowing the use of articles excessively craved, even though they seemed to be improper. Some judgment, however, is required, as it would be extremely injudicious to indulge a merely capricious appetite.

The sick room should always be kept well ventilated, as fresh air is an important remedial agent in all forms of disease, and especially in those of a febrile character; it exerts a salutary influence upon the lungs, and through them upon the whole system. In many diseases it will be necessary to cleanse the atmosphere of the room by one of the disinfecting agents named on page 137. The clothing should also be kept clean, and changed every three or four days, or oftener if necessary. At first, the diet should be light, as barley-water, Indian meal gruel, toast-water, arrowroot, apple-sauce, prune tea, orange-juice, buttermilk, &c., regulating the latter by the fur on the tongue; and as convalescence advances, beef tea, chicken tea, &c., may be

allowed, with wine, or other stimulants, when much debility is present. The patient should not be allowed to eat any solid food, it is not only injurious but is frequently dangerous. Solid food is not required in febrile diseases, as a general rule. There are many ignorant persons, however, who judge of a patient's improvement entirely by his ability to eat, whether with or without an appetite; their constant aim is to have him eat, eat, eat, and their greatest anxiety is expressed to the physician in one continued series of questions, the beginning, middle, and end of which, is, "Doctor, what may the sick person eat?" Get rid of such well-meaning but ignorant persons as speedily as possible.

A good nurse should always be procured, if possible, for more depends upon such an one than upon the physician. The nurse should not fail to carry out all the directions of the physician, for if he be worthy of the confidence of the patient and friends, his treatment should be punctually and faithfully pursued by the nurse; if he be unworthy, it is to be supposed he would not have been employed. Much mischief has been done by ignorant, careless, or self-wise nurses in neglecting the directions of the medical attendant. Too much care cannot be employed in the selection of a nurse. In addition, the nurse should attend to all the wants of the patient, as to food, drink, changing linen and bed-clothes, bathing, ventilating the room, preventing loud talking, and especially of any conversation tending to destroy the patient's confidence in the physician; a nurse who interferes with a physician, by speaking disparagingly of him, or by recommending another, is an unsafe and mischievous attendant upon the sick, and should be at once dismissed. And persons who enter the sick chamber to find fault with the treatment, or to recommend patent medicines, or their favorite physicians, &c., should, as soon as known, not be again allowed to enter it. Conduct of this kind has not only, in many instances, unjustly injured the reputation of the medical attendant, but has as frequently effected great mischief to the patient. Such persons are to be avoided as one would a rabid animal.

During convalescence from all exhausting diseases, much care must be taken, not only in the diet, but also in the exposure and exercise. From the debilitated condition of the digestive powers at this stage, and indeed of the system generally, a great amount of food or exercise would be exceedingly improper; and an inattention to these points has frequently occasioned death. Every means should be taken to guard against a relapse, and to gradually impart strength to the invalid, by a judicious course of diet and exercise.

Having thus laid down in general terms the course which may be successfully pursued in the treatment of Fevers, I will now proceed to treat of each form of fever specially, making known that selection from the above course, which experience has demonstrated to be the safest and most successful. But before entering upon the subject, I would observe to the general reader, that although the means indicated will be found valuable, still under no consideration should a person neglect to procure the services of a skilful and properly educated physician, in all cases where such can be had. But when he is at some distance, or cannot be in immediate attendance and the case requires treatment, the course herein laid down will be found efficacious, and may be persevered in until the arrival of the physician, or until the patient is cured, provided a practitioner cannot be obtained. I may here remark that one reason for the fatality attending acute disease in country places, is the tardiness in sending for the physician. If the farmer or his hands are engaged in labor, the patient, no matter what may be the nature of his disease, is permitted to lie in his

room until the labors of the day are finished, when some one is despatched for the doctor, who arrives in many instances in time to learn that the favorable period for relieving or curing the patient has passed; he does the best he can, but his patient dies, not because of his unskilfulness, but because of the neglect of the farmer or his family. This custom is a cruel one for the patient, and an unjust one for the physician. Whenever there is a patient requiring the services of a medical man, send for him at once, no matter what other considerations may present themselves. Let all persons living in the country, impress this subject firmly upon their minds; it will, if acted upon, prove a saving of health, life, and money.

INTERMITTENT FEVER. (*Febris Intermittens.*)

Intermittent fever, also known by the names of *fever and ague*, *chill and fever*, &c., is characterized by several distinct paroxysms of fever, which recur at regular periods, having a perfect intermission between each, and during which the patient enjoys apparent good health. When the paroxysms occur at the same period of time every day, or every twenty-four hours, the fever is called *quotidian*, or every day fever; when they occur regularly on every other day, or every forty-eight hours, it is called a *tertian*; and when they occur every third day, or every seventy-two hours, the intervening days being free from any symptoms of the disease, it is called a *Quartan*. These are the most common or regular types of intermittent fever; but it sometimes happens that other types, called irregular, are manifested. Thus, there may be two paroxysms a day, which is termed *double quotidian*, and in which although one may be removed, the other will continue unless it be treated independent of the previous associated paroxysms. There may likewise be a *double tertian*, in which there are two paroxysms on alternate days most generally occurring, however, at different hours, with a complete intermission of one day. Usually, the attacks vary, one being less severe than the other, and, like the double quotidian, while the one tertian is cured, the other may continue unless it receive exclusive treatment. A *triple tertian* sometimes occurs, having two paroxysms on one day, and one on the next. A *double quartan*, as well as a *triple quartan*, may also occur, but it is unnecessary to enter into a minute description of their peculiarities.

There are several other varieties of intermittent mentioned, and which are occasionally met with. The above forms of types of fever and ague frequently change into one another, so that the tertian and quartan may become quotidian, while quotidian are liable to be converted into remittents, or even continued fevers. Intermittent fevers occurring in the spring, are called *vernal*, and the attack frequently disappears as summer advances. Those which take place in autumn, are called *autumnal*, and are usually more severe and obstinate, being often complicated with chronic affections of the abdominal viscera. In warm climates especially, they are very obstinate, frequently resisting every mode of cure, and degenerating into chronic affections of the spleen, liver, dropsy, &c. Each paroxysm of intermittent fever consists of three stages, viz. the *cold*, *hot*, and *sweating*, which run their course in this order of succession, generally, in the space of from three to eight hours.

SYMPTOMS. The *cold stage* commences with languor, a sense of debility, yawning, and stretching, and an aversion to food and exercise; the face and extremities become pale; the skin over the whole body seems constricted, as if cold had been applied to it, and resembles the skin of a picked goose,

and is hence termed *cutis anserina*. The nails become purple, the lips blue, the countenance assumes a shrivelled appearance, and the teeth chatter. Finally, severe chills with shivering, or a universal shaking, come on, which are very distressing, and are accompanied by dull pains in several parts of the system, and sometimes by nausea and vomiting. The pulse is small, frequent, and irregular; respiration short, rapid, and laborious; the mind is irritable, unsteady, confused, and sometimes there will be complete stupor; the urine is copious and colorless; the tongue pale, with, more commonly, a white fur; and the mouth is dry and clammy, with great thirst. These symptoms vary in different individuals, being almost imperceptible in some, and very severe in others, especially in the old and debilitated, and those who have impaired their constitutions by dissipation. After a longer or shorter time, the chills abate, and the hot stage commences.

In the *hot stage*, there is a gradual return to warmth, at first manifested by slight flashes of heat, but which soon become steady and intense. The skin becomes warm, smooth, red, and dry, and very sensitive; the heat of the body increases considerably above the natural standard, sometimes to 110° Fahrenheit. The pulse becomes more regular, quick, strong, and hard; respiration hurried, but more free and regular; pain in the head increases, with more or less throbbing of the temples; if the attack has been severe, delirium may be present; the urine is scanty and high-colored; the tongue more natural in appearance, with a white or brownish fur, and is sometimes red, dry and cracked; the mouth is dry and husky, and there is still considerable thirst. Sometimes diarrhea, or obstinate constipation will be present, and children are frequently attacked with convulsions. Generally, there is more or less severe pain in the limbs and back. After a certain time, varying with individuals, these symptoms gradually subside, and the sweating stage comes on.

In the *sweating stage* the skin gradually recovers its natural condition, becoming soft and cool; a moisture breaks out upon the forehead and neck, which by degrees becomes a more or less profuse sweat, and extends over the whole body. The heat of the body descends to its usual standard, the pulse abates in frequency, and is less full and hard; respiration is free and full; the various pains in the system disappear, the urine deposits a reddish sediment; the tongue becomes moist and natural, with but little thirst, and most of the functions return to their ordinary state; all febrile symptoms disappearing, and leaving the patient in a weak and wearied condition. After a specific interval, according to the type of the fever, the paroxysms return, commencing with the chill, and passing through the hot and sweating stages.

When the paroxysms are of short duration, regular in their occurrence, leaving the intervals quite free, we may expect a speedy recovery; but when they are long-continued, violent, and attended with much anxiety and delirium, the termination is apt to be fatal.

Ague sometimes presents itself in a form known by the various names of *sun-pain*, *masked ague*, *dumb-ague*, &c. There is a severe pain in one side of the head, or extending over the whole of it, with an excited condition of the arteries of the neck, and which is not only periodic in its attacks, but is frequently preceded by slight chills, or sensation of cold, with more or less depression of spirits. Sometimes the pain will be in the face, in one or more teeth, in the chest, stomach, womb, or any other part of the body, and may be determined by its periodicity, slight chills, &c.

CAUSES.—In consequence of the prevalence of this fever in marshy

countries, it is generally attributed to marsh effluvia, under the name of "malaria," but what the character of this malaria is, remains yet undetermined, though both heat and moisture seem to be required for its production. Some eminent medical men believe it to be a species of microscopic animalculæ, the result of vegetable decomposition; while others consider it to be owing to the presence of innumerable swarms of spores from microscopic cryptogamous growths of a poisonous nature, being the offspring of vegetable decay. The summer of 1854 was a very hot and dry one, so much so that many ponds and marshes were completely dried, exposing surfaces of soil favorable to cryptogamous growths; this was followed by the summer of 1855, sickly throughout the whole country with the higher grades of epidemic forms of disease, and which was hot and wet, favorable to the development and maturity of the above growths. During the rains of the latter part of the summer of 1855, as well as in the early part of the fall, almost invariably after each rain occurring in the night, a green substance was found covering the earth next morning; some of this I examined under the microscope, and found it to consist of microscopic vegetation and spores. On placing some of it in cold rain-water, which had been previously boiled and filtered, in two days' time the water was filled with monadal infusoria. Whether such a condition of the atmosphere would produce disease or not, I am not prepared to say, though I believe it will, and on this belief, as my friends well recollect, I predicted a sickly season, and which, as is well known, was fully verified. An objection was made to my view, that similar products have been collected and taken into the stomach without any deleterious influences; this may be true, but I conceive that their inhalation into the lungs, and not their digestion in the stomach, constitutes the mischief.

Persons living in malarial districts, whose systems are debilitated, who make use of a poor diet, who live in damp houses, and are exposed to dampness and night air, who exercise to fatigue, who sit up late at nights, and who are under the influence of depressing circumstances of whatever character, are much more subject to attacks of intermittent fever, and of a severe form, than those who are placed under influences of an opposite nature. Individuals addicted to intemperance in spirituous liquors, are particularly liable to the severer forms of this disease.

The most common consequences of this disease, especially when its attacks have been frequent, or long-continued, and also when it has been improperly treated, are enlargements of the liver, or spleen, jaundice, dropsy, dyspepsia, diarrhea, dysentery, induration of the pancreas, discoloration of the skin, impotency, general debility, &c.

Under ordinary circumstances, the *prognosis* of intermittent fever is favorable; but it becomes less so when complicated with other difficulties, as great congestion of the internal organs, nervous prostration, inflammatory conditions, &c. The more severe and obstinate the symptoms, the more difficult, as a general rule, will be the cure.

TREATMENT.—The indications in the treatment of intermittent fever, are: 1st. To shorten each stage of the paroxysm as much as possible, and render the intermission perfect, by which means the disease is not only rendered milder, but is frequently broken up at once. 2d. Give remedies through the intermission, which will prevent a return of the paroxysm.

In the *cold stage*, or just before its commencement, the patient should be placed in bed and warmly covered, and hot bricks, or bottles of hot water placed to his feet, thighs, sides and armpits, being careful, however, not to injure the skin by too great a heat. In addition to this, he should be

urged to drink freely of warm drinks, as an infusion of Boneset, Virginia Snakeroot, or Catnip, to a teacupful of which, in violent cases, a teaspoonful or two of the Compound Tincture of Virginia Snakeroot may be added. Bleeding in this, or any stage of the disease, should never, under any circumstances, be permitted. When the symptoms are very violent, with great heat in the head, severe pain in the back, and a tendency to delirium, or coma, more energetic measures should be adopted. Stimulating liniments should be applied to the feet and legs with considerable friction, cold water should be applied to the head, or some other cooling lotion, and a Mustard poultice should be applied along the whole length of the backbone, or spinal column.

Sometimes it will prove highly beneficial to administer an emetic just before the fit is expected, as it often prevents the paroxysm, frequently breaking up the disease at once. The Compound Powder of Lobelia, is the emetic I should prefer, (See Pharmacy.) After the vomiting has ceased, it will occasionally be found advisable to follow with a full dose of the Compound Powder of Jalap, or other Cathartic, which will prevent the liver and spleen from becoming tumefied, which is often the case in violent intermittents, which will likewise prepare the system, and render it more susceptible to the influences of other remedies. Should it be deemed injudicious from any cause to administer an emetic, it may be dispensed with, and the purgative only given. However, these active agents are seldom required, except in the more severe attacks. When there is a torpid condition of the liver, Podophyllin and Leptandrin may be given in doses of from one-eighth to one-fourth of a grain of the former, to one grain of the latter for a dose, and which may be repeated for several evenings in succession; the dose should be so proportioned as to produce a moderate laxative effect daily, and not an active purgation.

Sometimes it happens that the disease assumes a malignant or congestive form; the cold stage is very much lengthened, and there is great pain in the head, a feeble pulse, vertigo, a sense of weight and oppression of the chest, with other symptoms indicating a highly congested condition at the abdominal organs. The hot stage comes on slowly, and is imperfect, the pulse being frequent, small, and tense, the countenance anxious, the skin hardly warm, perhaps an internal heat complained of, and little or no thirst. The perspiration in the sweating stage is copious and fetid, with perhaps colliquative hemorrhages from various parts of the body, &c. Death usually happens during the cold stage, and more commonly in the third paroxysm. In the treatment of this form, the most active measures must be employed to determine the circulation to the surface, and thus relieve the congested organs; for this purpose, the body and limbs should be well rubbed with stimulating washes or liniments, and exposed to the action of confined steam, by placing hot rocks enveloped in moist cloths around the whole body; friction to the surface should not be suspended until reaction ensues, and the symptoms improve. Internally, the following must be given, and continued until the peculiar effects of the Gelseminum are induced, which may be known by the patient's inability to raise his eyelids, although perfectly conscious of all around him. Take of Sulphate of Quinia one drachm, Elixir Vitriol three fluidrachms, Tincture of Gelseminum seven fluidrachms; mix together. The dose is a teaspoonful every fifteen or twenty minutes, in a small quantity of some warm tea, or infusion of Capsicum. In addition to this, catharsis should be induced if possible, by active purgative injections, and by Podophyllin administered internally, in one or two grain doses, and repeated as required. In describ-

ing the symptoms of *congestive chill*, a writer observes, "it commences with a sensation of languor, weariness, disinclination to exercise, and a want of appetite. The chill comes on with a shrunken condition of the extremities, and is not always clearly felt by the patient, and is followed by paroxysms of fever of greater or less intensity, with a yellowness of the surface, and of the conjunctiva. Not unfrequently the patient may be able to move about for some days, but eventually becomes prostrated by an increase in the severity of all the symptoms. The stomach becomes greatly irritated, the bowels very torpid, being scarcely acted upon by the more energetic purgatives. The cold stage frequently continues for five or six hours, during which, the patient suffers excessively from the irritable condition of the stomach, which obstinately resists all medication for its relief. The tongue varies in its appearance, being coated from a pale-brown to black, but commonly moist; the pulse is thread-like, weak, and but little increased in frequency above natural. Usually, the attacks manifest themselves every other day with great severity, a light chill being experienced, however, every day. A sensation of acute burning is frequently felt by the patient, who will desire to be placed where he may have the cool air to pass over him, and this will be the case when the parts in which the burning is felt, are very much below the ordinary temperature of the body; which will also be the case with the surface of the limbs and body generally."

During the *hot stage*, I am in the habit of administering the following preparation. Take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm, Tincture of Black Cohosh root, and Tincture of Gelsemium, each, seven fluidrachms; mix. The dose is from twenty to thirty drops in a tablespoonful of water every half hour. If this cannot be obtained, the patient may be bathed with weak tepid ley water, and may drink cold lemonade, currant jelly water, apple water, or even cold water, if he desires it. Should there be pain in the stomach or bowels, with nausea or vomiting, Mustard poultices may be applied over the painful region, and the following may be given every fifteen minutes, in a little Peppermint water:—Take of Powdered Rhubarb fifteen grains, Saleratus seven grains, Sulphate of Morphia one-twentieth of a grain; mix well together, for a dose. Should there be great pain in the head, the pulse being hard, full, and rapid, Mustard should be applied to the feet, and along the whole course of the spinal column, and a dose of some active purgative exhibited, as the Compound Powder of Jalap; cold applications should likewise be made to the head.

In the *sweating stage*, but little treatment is required, except to keep the patient quiet, and not adopt measures to check the perspiration. In both the hot and sweating stages, it will be better to keep the patient in bed, with some light covering over him.

During the intermission, means must be used to fulfil the second indication, viz: to prevent a return of the paroxysm, for which there is no remedy equal to Peruvian bark, or its alkaloid salt, the Sulphate of Quinia. In many sections of country there is a decided aversion among the people to the use of Quinia, because they say it injures the system, producing ague-cake, dropsy, &c. But this is an erroneous idea, for these diseases are the legitimate consequences of the chills and fever; and when they occur after the use of Quinia, it is either because the attack was a very violent one, or because the remedy was not given in a proper manner to overcome the disease. But it must be remembered, that persons living in a malarious district, exposed to all its influences on the system, and suffering from

repeated attacks of chills and fever, will necessarily become affected with the above diseases, no matter what may have been the remedies employed. Beside it is undoubtedly true that Sulphate of Quinia has been frequently adulterated with arsenic, and other agents, but this should only render us more cautious of whom we purchase our medicine, and not cause us to speak disparagingly of the genuine, unadulterated article.

Many preparations have been found successful in preventing the return of the paroxysm, among which I will name the following as the best with which I am acquainted.

1. Take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm, mix, and dissolve the Quinia, and then add Tincture of Black Cohosh root fourteen fluidrachms. I use this preparation more frequently than any other in the treatment of fever and ague, and it is seldom that more than one chill is experienced after having commenced its use. The dose is twenty drops in a little water, to be repeated every hour. Should the bowels be costive, and the tongue furred white, a combination of Rhubarb two parts, and Saleratus one part, may be given in doses of five or ten grains, or sufficient to produce one or two moderate evacuations from the bowels daily, and which dose must be repeated three times a day.

2. Take of Sulphate of Quinia, and Prussiate of Iron, each, three grains; mix, for a dose; to be repeated every two hours.—*I. G. Jones, M. D.*

3. Take of Extract of Stramonium one grain, Capsicum one grain, Sulphate of Quinia eight grains; rub well together, and divide into four doses, one of which is to be taken every hour, commencing four hours before the expected chill.

4. Extract of Stramonium one grain, Sulphate of Morphia one grain, Sulphate of Quinia eight grains; rub well together, and divide into four doses. To be taken as the preceding in cases where there is much pain in the stomach, and nausea or vomiting.

5. I have never used the following preparation, though I have seen it used in domestic practice and with the most successful results. Take one Nutmeg and burn or char it over a flame; pulverize it, then add to it an equal quantity by weight of dried or burnt Alum, and divide the mixture into three powders. First purge the bowels, and then administer one powder every time the chill comes on; frequently, the first dose will effect the cure and it is very seldom that the three doses will be required for that purpose.

6. Take of Valerianate of Quinia four grains, Prussiate of Iron six grains, Alcoholic extract of Black Cohosh a sufficient quantity to form the whole into a pill mass. Divide into four pills, of which one is to be given every hour, in cases where there is excessive irritability of the nervous system, commencing four hours previous to the anticipated chill.

Various other agents have been recommended in the cure of this disease, as Cornine, Salicin, Bebeerine, &c., they may occasionally be useful, but are inferior to the preparations given above. Common spider web one grain, mixed with Extract of Stramonium one-eighth of a grain, and made into a pill for a dose, has been found successful in many instances; the dose is to be repeated every hour or two during the intermission. Of course, if a person is residing in a malarial district, constantly exposed to the causes which occasion chills and fever, he cannot expect any medicine to permanently screen him from its attacks, the only certain preventive, is an immediate removal to a more healthy neighborhood. One may cure a burn, but this will not prevent the person from being burned again whenever exposed to the action of fire; and so it is with chills and fever, a cure can be made, but as long as the person is influenced by the originating causes

of the disease, so long will he be subject to its attacks. After an attack of intermittent fever has been cured, in order to prevent a return during that season, it will be a safe, proper, and prudent course to take some vegetable Tonic Mixture, and continue its use for several weeks; the following will be found an excellent preparation for this purpose:—Take of Poplar bark, Dogwood bark, Wild Cherry bark, Ginseng root, each, in coarse powder, half an ounce; Peruvian bark, Plantain root, of each, in powder, one ounce; Capsicum, Cloves, Cinnamon, of each, two drachms, good Whisky, three pints. Mix all together and let them stand for several days before using. The dose is from a table-spoonful to half a wineglassful three times a day, previous to each meal. In “sunpain,” “masked ague,” or “dumb ague,” a similar treatment is to be pursued. Cleanse the bowels by a moderate catharsis, and then administer the preparation of Sulphate of Quinia, and Saturated Tincture of Black Cohosh root, above-named in formula, No. 1.

Persons subject to fever and ague, especially those residing in situations in which it is prevalent, should avoid the damp air of the morning and evening, also exposure to a hot sun; during damp seasons, fires should be kept in the sitting and sleeping rooms. (See Chapter I., page 21.) The diet during the hot and sweating stage should be very light, and principally composed of gruel, arrowroot, barley-water, prune tea, &c. During the intermission, and for some time after a cure has been effected, the diet should be regular, consisting of nutritious but easily digestible food, as boiled rice, bread and butter, beef tea, chicken or mutton broth, toast-water, plain bread pudding, &c. All high-seasoned, flatulent, stimulating, or indigestible food, must be carefully avoided; hot bread, hot drinks, fat or greasy food, and especially pork, must also be positively prohibited. Tender wild game is frequently beneficial.

Moderate exercise should be taken daily, but not to fatigue, nor when exposed to a hot sun; and frictions to the whole service of the body will be found very serviceable. Flannel worn next the skin will keep the body warm, and protect it from the influences of sudden changes. When individuals residing in malarious localities, are obliged to expose themselves to the early morning air during the sickly season, they should always fortify the system beforehand, by a cup of coffee, and a slice or two of bread, &c., which will render them less disposed to be acted upon by the malarial influences.

Engorgement or induration of the liver or spleen, remaining or occurring after the removal of intermittent fever, must be treated the same as when these organs are thus affected under other circumstances.

REMITTENT OR BILIOUS FEVER.

THIS disease partakes in some degree of the nature of intermittent fever, being generally produced by similar causes. There is, however, this difference between the two, in Intermittent fever the paroxysms return at stated periods, and on subsiding leave the patient entirely free from all febrile symptoms; while in the Remittent there is only an abatement between the paroxysms, and an irregularity in the time of their recurrence; or, in other words, one paroxysm succeeds another so quickly, that the patient is never without some degree of fever. It is a form of disease very common to our southern and middle States, and may occur at any season of the year, but principally during the summer and fall months. It is met with under the various types of a remittent, continued, or highly malignant fever, being

attended with a greater or less amount of arterial excitement. The names, African fever, Bengal fever, Michigan fever, &c., have also been applied to it, from its prevalence in these places, and many physicians have erroneously called it "Typhoid fever," because of the presence of typhoid symptoms in its latter stage. The term "Bilious fever," by which the disease is more commonly known in this country, originated in an erroneous opinion that it was caused by a derangement of the biliary functions; when the fact is, miasmatic influences alone give rise to it.

SYMPTOMS. This form of fever usually commences with weakness, lowness of spirits, yawning and stretching, aversion to food, more or less severe pain in the head, alternate flashes of heat and cold, and which may frequently continue for several days before the disease is fully developed; the sensation of coldness gradually increases to a more or less well-marked chill, rarely, however, amounting to a shake; the chill or sense of cold is felt more particularly about the back. After a short time, febrile symptoms succeed this stage of depression; as, flushed face, heat and dryness of the skin, suffused eyes, hurried or difficult breathing, great debility, pain in the back, and in the head, the latter being frequently very severe, nausea or vomiting from irritability of the stomach, thirst, and sometimes delirium. The pulse is full and frequent; the urine scanty and high-colored; the bowels usually costive; the tongue, at first covered with a white fur, or, if the biliary functions be considerably deranged, a light-brown, eventually becomes much darker colored. When there is much irritation of the alimentary canal, diarrhea is apt to be present; and when there is considerable prostration of the vital force, the pulse instead of being quick, may be slower than usual, or it may be quick and weak. The fever continues from eight to twelve, or even twenty-four hours; when the pulse gradually approaches to nearly its natural standard, the skin becomes of somewhat diminished temperature, but rarely below that which is natural to it; it is usually dry and softer, although occasionally, a slight moisture may be observed on the surface. The urine is more copious and deposits a sediment. But there is not a complete subsidence of the fever, only an abatement of its severity, which is termed a remission. The remission may occur at any period of the day, but more commonly in the morning, varying in its duration; more frequently it will continue for two or three hours; but sometimes it is hardly perceptible, and is immediately followed by another paroxysm, with an aggravation of all the symptoms.

In the more severe forms, the tongue soon becomes dry, and covered with a dark-brown, or nearly black coating; the eyes are languid, dull, and of a yellowish hue, or red and fiery; respiration is laborious; there is intense pain in the back and head, with an aversion to light and sound, and frequently delirium; the pulse is full, frequent, and corded, sometimes irregular; nausea and vomiting of a thick, ropy, green or yellow fluid; great restlessness and wakefulness; tenderness and even pain in the region of the stomach; and there is either an obstinate constipation, or discharge, of a thin, watery fluid, with griping and tenesmus. The evacuations caused by cathartics are slimy, fetid, and dark-colored.

The symptoms, in this disease, vary very much in severity and character, according to the situation and constitution of the patient, the season of the year, the treatment adopted, and many other circumstances. Sometimes symptoms indicating great disturbance of the biliary functions predominate; sometimes of the nervous; and, at others, putridity manifests itself. And it is not uncommon to find a succession, or even a complication of them in the same person and at the same time. The disease may be complicated with a torpid and engorged liver, with disease of the stomach, spleen,

or bowels, with congestion or inflammation of the brain, and sometimes with inflammation of the lungs.

If the more active symptoms are not removed, they are apt to be followed by a stage of nervous prostration, or a typhoid condition, which has led many practitioners to miscall the disease "typhoid fever." This condition is frequently owing to a neglect of the disease at its early period, or to an improper treatment by powerful emetics, drastic purgatives, bloodletting, &c. The tongue becomes parched, tremulous, and dark-colored, or dry, contracted, and red, the pulse rapid and wiry, with twitching of the tendons, (*subsultus tendinum*,) respiration short, quick, and laborious, a peculiar anxious expression of countenance, the skin dry, or cool and covered with a clammy moisture, the head hot, the feet and legs cold, stupor, and low muttering when an attempt is made to arouse the patient, picking at the bedclothes, or grasping at imaginary objects in the air, involuntary discharges from the bowels, and finally death.

CAUSES. Bilious or remittent fever, is undoubtedly caused by malarial influences, or exhalations from putrefying materials, whether these emanate from a marshy district, a newly dug canal or drain, or a damp house. And it may be, as probably with intermittent fever, that the exhalations consist of the spores of microscopic vegetations or animalcules, growing in these moist places. I place no confidence in the opinion that cold, excessive fatigue, intemperance, &c., develop the disease, though in a proper location they may render the system more susceptible to an attack. Those of relaxed habits, who have a poor, innutritious diet, who labor hard, or are exposed to an impure atmosphere, and those who lead a life of dissipation, are especially liable to this fever.

The *prognosis* in remittent fever is usually favorable, and the more marked the remissions,, and the nearer they approach to complete intermissions, the less difficulty will there be in curing it. When complicated with congestion or inflammation of internal organs, or with great nervous prostration, or loss of vital force, running into low, typhoid conditions, it is always of an unfavorable nature.

TREATMENT. The treatment of remittent fever will depend somewhat upon the period at which the practitioner is called. When the premonitory symptoms are present, previous to the chilly stage, an emetic, or a purgative will frequently be of value, but after the disease has fully developed itself, they will be found mischievous, except under certain circumstances hereafter referred to.

In the hot stage, or while the fever is on, the surface of the body and limbs should be frequently bathed with warm weak ley water, to which a little whisky may be added, and the following preparation may be given internally:—Take of Tincture of Gelsemium half a fluidounce; Tincture of Aconite twenty drops. Mix, and give twenty drops for a dose in a teaspoonful of water, repeating the dose every half-hour or hour. As soon as the fever abates, or the peculiar relaxing effects of the Gelsemium* occur, cease the further administration of the medicine, until the next febrile paroxysm.

In some cases, the Compound Powder of Ipecacuanha and Opium will be more servicable in the febrile stage, and may be administered in doses of three or five grains, repeated every two or three hours. When water is desired let the patient have it.

*These effects will be explained in the *Materia Medica*, Part III, under the head of Yellow Jessamine.

When the remission occurs, whether the fever has sensibly abated or not, one of the following preparations must be given, the same as in intermittent fever:—

1. Take of Sulphate of Quinia twenty grains; Elixir Vitriol one fluidrachm; mix, and dissolve the Quinia, and then add Tincture of Black Cohosh root, Tincture of Gelsemium, of each, seven fluidrachms,—mix together. The dose is twenty drops every half-hour or hour, in a little water. Should the bowels be constipated, or the liver torpid and congested, as manifested by the dark coat on the tongue and the yellowishness of the eyes and perhaps the skin also, the first dose may be preceded by a mixture of Podophyllin one-fourth of a grain, with Leptandrin one grain, and which may be repeated every six hours until the bowels have been acted upon. In many instances the Compound Powder of Jalap will act with the most advantage.

Formulæ No. 2, and No. 6, under the treatment of intermittent fever, may be substituted for the above in some instances, according to the directions therein given. In the early days of the disease, an emetic will sometimes arouse the liver, and produce a favorable shock upon the system, if administered at an early period during the remission; but when too often, or too frequently repeated, emetics will be found hurtful. If, instead of constipation, diarrhea should be present, it may be checked by a mixture of Geranin, two grains; Sulphate of Morphia one-eighth of a grain; and which dose may be repeated every two or four hours, according to the character and frequency of the discharge.

When there is considerable irritation of the stomach and bowels, indicated by distress in the abdomen, tenderness in the region of the stomach, nausea, vomiting, red tongue, and slimy and light-colored fluid discharges, it will be well to omit any active internal medicines, until this condition is subdued. An infusion of Marsh-mallow root and Peach leaves should be drank freely; Mustard poultices applied over the stomach and bowels, and to the feet and along the spinal column; and when those upon the abdomen are removed, they should be replaced by a warm fomentation of Hops and Boneset, or of Stramonium leaves. In some instances, an eighth of a grain of Sulphate of Morphia will be found useful. But the best agent will be a combination of Tincture of Gelsemium half a fluidounce, with Tincture of Aconite twenty drops, of which twenty drops may be given every half-hour or hour, in a teaspoonful of water.

Severe pain in the head may be overcome by Mustard poultices to the feet, and along the spinal column, together with cooling applications to the head, and, if not contra-indicated, a cathartic. (See Auxiliary Treatment of Fevers, page 180.)

When the tongue is coated yellow, dark-brown, or black, let the patient drink freely of acidulous beverages, as tamarind water, orange juice, lemonade, cider, and even vinegar, when craved. (See page 182.)

If the disease is not cured by the above measures, it will probably assume the *typhoid condition* previously referred to, and which must be treated with great care, or the patient will inevitably sink. The principal indication here, is to stimulate the system and support it, until the powers of the vital force have become sufficiently established to preserve the patient. All active internal measures must be stopped, and stimulants must be freely administered, pursuing the course named on page 181, under *Auxiliary Treatment of Fevers*.

During the whole course of treatment, the patient should be kept perfectly quiet, and any excess of heat, noise, motion, or strong light, removed or avoided, as these often tend to increase the violence of the fever, or at all

events, the patient's restlessness. The body-linen, as well as that of the bed, should be frequently changed; the chamber ventilated daily, and sprinkled with vinegar, or the atmosphere purified with one of the disinfecting agents named on page 137; and the discharges from his bowels should always be immediately removed. The friends of the sick in their anxiety to manifest their kindly feelings, generally overshoot the mark, and render themselves exceedingly troublesome and annoying to the patient, by their ill-timed visits and their constant inquiries as to how he feels, &c. This is generally worse in small country places than in large cities. The chamber of a sick person should be kept entirely free from visitors, and especially those disposed to much conversation, gossip, or queries; the physician, the family, and the nurse, are the only persons who should ever be allowed to enter a sick room, unless circumstances require the presence of others, and then these should be carefully selected. A neglect of these matters has frequently brought discredit upon a physician, and death upon his patient. To the nurse always belongs the control of the sick chamber, in the absence of the physician, and the family and friends of the sick should always aid her in carrying out the advice and intentions of the medical attendant.

During convalescence great care should be taken to avoid every thing calculated to bring on a relapse. Much prudence must be regarded in the diet and exercise. The diet should be light and nutritious at first, as meat broths, boiled rice, cooked ripe fruit in small quantity, &c., gradually allowing parboiled eggs and oysters, as the strength improves, until the ordinary diet can be resumed. Both mental and physical exercise must be moderate, never fatiguing body or mind; a cheerful companion will be of much service, if he be judicious. Exercise in the open air as soon as strength and circumstances will permit. Sometimes, convalescence is very tedious, the person not recovering his health rapidly; under such circumstances, if the tongue be pale and the pulse slow, some stimulating tonic will be required, as cold infusion of Virginia Snakeroot, in doses of a table-spoonful several times a day, or, the following compound may be taken:—Take of Golden Seal, Juniper Berries, Prickly-Ash bark, Wild Cherry bark, each, coarsely bruised, one ounce; Podophyllum, Tansy, of each, half an ounce. Pour on these two pints of boiling water, cover them, and steep for an hour in some hot place, as on a hot stove, or hot ashes. Let the whole stand until cold, and add two pints of whisky, and one of molasses. Allow the mixture to stand for a few days, when it will be fit for use. The dose is a table-spoonful, three or four times a day. The Compound Tincture of Tamarac is a still better preparation for the above purpose. Or, in the absence of these, Scotch Ale will frequently be found advantageous. However, if the pulse be quick, and the tongue red, tonics will be contra-indicated; in such cases, small doses of Tinctures of Stramonium, Belladonna, or Aconite, will prove of much utility. The Valerianate of Morphia will be found exceedingly beneficial in this condition, in doses of one-eighth or one-fourth of a grain, three times a day, with a diet of arrowroot, infusion of elm bark, or of gum arabic, gruel, panada, &c.

CONGESTIVE FEVER.

This disease is also termed *congestive bilious fever*, and in many points resembles typhus. Some practitioners consider it a typhus fever. It occasionally attacks with great suddenness, and runs its course rapidly. It is a disease more common in malarial districts, especially in the southern and western States.

SYMPTOMS. It commences as with ordinary remittent fever, with general debility and lassitude, a weakness of the limbs, confusion of the mind, vertigo, and sometimes a sense of heaviness, or a deep-seated pain. A chill or coolness of the extremities is sometimes experienced, but, as frequently, the patient is not sensible of any diminution of temperature of the body. The paroxysms and remissions are more or less distinct, sometimes they are hardly appreciable, at others they amount to a perfect intermission. As the fever progresses, the skin will be dry, husky, and parched, with a pungent heat, which is succeeded after a time by a cold, clammy sensation; sometimes it will vary in temperature, being cold, or hot, only in particular parts. The eyes are dull, suffused, and frequently glassy; the pulse is variable, being full, bounding, and tense, or weak and slow, or irregular and readily compressed; the respiration is hurried and difficult, with frequent sighing; the countenance assumes a dull, sleepy, haggard, and distressed appearance; the tongue, at first little changed, or covered with a white fur, soon becomes dark brown, or black; sometimes it is moist, at others dry, turgid, and crisped; and not unfrequently, especially in very serious cases, it remains free from any coat, sleek, and glossy, resembling raw beef, and it is most usually quite tremulous. When there is great inflammation or congestion of the liver, the tongue will be frequently red, parched, fissured, and bleeding. The voice is languid and rumbling, or inarticulate and hesitating; the lips are dry and livid; the teeth frequently become covered with a dark sordes which may spread to the gums and lips; there is commonly more or less irritability of the alimentary canal, the stomach rejecting all food, and accompanied at times with frequent and prostrating diarrheal discharges; if the bowels are costive, the evacuations obtained by medicine are dark and fetid. The urine is deficient in quantity, hot, and at times high-colored. Pain will be produced on making pressure on the abdomen, over the region of the stomach, and over the liver. From the commencement of the disease the mind is disordered, and soon falls into a state of lethargy, or low delirium, from which the patient may be partially aroused; and this stupor and drowsiness will most frequently continue during the remission until the next paroxysm.

During the whole of the disease the patient, although disposed to stupor, is very restless and uneasy; his senses appear to be obtuse, and there is involuntary jerking of the muscles. If the disease be not subdued, the prostration of the nervous system becomes more marked, the head hot, the extremities cold, with coma, or low, muttering delirium, twitching of the tendons, and a reaching or picking in the air or at the bedclothes. Dark-colored bleedings from the nose, mouth, or bowels, or livid spots on the skin, are the frequent forerunners of death.

CAUSES. The same as Remittent Fever.

The *prognosis* in this form of fever is less favorable in proportion to the degree of nervous prostration, stupor, internal irritations and congestions, and severity of ordinary symptoms. When there is not a great degree of drowsiness, and the treatment exerts a marked influence on the disease within a reasonable time, the mind becoming less confused and stupid, the tongue and pulse more natural, and the surface moist and of ordinary temperature, with a gradual diminution of other febrile symptoms, the prognosis is decidedly favorable.

TREATMENT. When called to the disease in its early stage, before there has been much prostration of the system, an emetic, followed by a cathartic, will frequently be found useful. These are given more especially on account of the shock they impart to the system, than to any removal of morbid accumulations in the alimentary passages, and are often followed either

by a complete removal of the disease, or by changing it into a milder form. As an emetic, the Compound Powder of Lobelia will be found useful, when administered according to the directions given under its head in Pharmacy, Part III. But after the first or second day of the disease, great care must be used not to employ depleting, or revulsive measures.

The surface of the body must be bathed with a warm, weak ley water; and the use of stimulating liniments to the extremities, with considerable friction, and mustard poultices applied to the feet, wrists, ankles, and along the spinal column, will be found decidedly beneficial.

Internally, the Sulphate of Quinia should be exhibited as soon as possible; a mixture of the Quinia three grains, with an equal quantity of the Prussiate of Iron, may be given every two or three hours throughout the whole course of the disease; or, when there is inflammation or irritation of the stomach and bowels, it will be better to give the Quinia in doses of one or two grains every hour, at the same time giving a mixture of Tincture of Gelseminum four fluidrachms, and Tincture of Aconite twenty-four drops, —the dose of which is about thirty drops, and which should be continued until the symptoms of irritation are removed, or until the Gelseminum has induced its peculiar relaxing effects upon the system. Or, formula No. 4, on page 190, may be substituted in some cases, where the above does not appear to act promptly.

As soon as the tongue assumes the dark or brown coat, acidulous drinks must be given, among which I know of none better than good cider, of which the patient may drink freely; in addition to its acidity, it possesses mild stimulating properties. In its absence, lemonade, vinegar and water, orange juice, &c., may be substituted. Cold water may also be drank freely, if the patient craves it. Much pain and distress in the bowels may be overcome by the application of warm fomentations of Hops and Tansy; and great heat in the head, or severe pain, will require cooling lotions to the head, as in auxiliary treatment of fevers, page 180, which see.

As this disease is more generally accompanied with a torpid, or congested condition of the liver, I am in the habit of producing one or two very moderate evacuations from the bowels, daily, by the employment of a strong infusion of Blackroot, (*Leptandra Virginica*), in doses of a table-spoonful every hour or two, or sufficiently often to produce the desired effect, being very careful not to cause any degree of active purgation. I find it decidedly beneficial, very few patients having the torpidity, or congestion, to remain after the paroxysms have been checked, or the cure effected. The Blackroot appears to me to possess both an anti-malarial, if I may so express it, and a cholagogue influence, and which is not found in its concentrated preparation, Leptandrin, which I never employ in this malady. Occasionally, in some very obstinate cases, a small portion of Mandrake root, say one-sixth or one-eighth of the quantity of Blackroot, may be advantageously added to the infusion.

Should the disease not be arrested by the above measures, but continue its course until the latter stage of great prostration takes place, the same means must be adopted as named in remittent fever, the particulars of which will be found on page 181, under *Auxiliary Treatment of Fevers*.

During the disease lightly nutritious drinks may be allowed, as toast-water, barley-water, rice-water, &c.; but if the disease becomes tedious, it will be necessary to give something more substantial, as apple-sauce, currant jelly, orange juice, guava, light custard, &c.

The general management of the patient, both during the disease and in the convalescent state, will be the same as mentioned under the head of remittent fever, on page 195.

PERNICIOUS FEVER.

This disease, like the preceding, is a modification of bilious, or remittent fever; it is occasionally met with in the middle and western States, but is of more frequent occurrence in the South.

SYMPTOMS. The early symptoms of this fever resemble those of a severe remittent, or intermittent. The symptoms by which it may be determined from the previous forms are, the coldness of the extremities, which frequently spreads over the surface of the whole body; though it is by no means uncommon for the head and extremities to have a marble-like coldness, while the temperature on the body will be very much exalted. The skin over the parts affected with coldness, have a livid, contracted, wrinkled appearance, particularly on the face, hands, and feet; the countenance assumes an expression of anxiety or dread; the pulse varies; it may be weak and tremulous, and generally unequal; it may be tense and hard, but compressible under the fingers; it may intermit; it may be frequent, even to 150 or 160 beats in a minute; it may be flickering, or it may be imperceptible at the wrist. The tongue varies also; it is almost invariably pale, but may be contracted and dry, or natural and moist; and, as in cases of great prostration generally, it will be tremulous, or there may be an inability to protrude it. The thirst is excessive and annoying; and from the disturbed condition of the stomach, the water is ejected soon after swallowing it. Respiration is rapid and short, frequently unequal, with more or less sighing. The bowels may be very costive, or they may be loose, with watery discharges, either whitish or red. The mind is sometimes clear, at others stupid, or lethargic. Constant restlessness is an almost invariable symptom, the patient rolling and tossing about from one side of the bed to the other. There seems to be an extreme depression of nervous action, or vital force, almost amounting to paralysis.

The paroxysms are periodical, assuming the quotidian or tertian type, with a more or less perfect remission or intermission; but each paroxysm increases in malignancy, until cured by proper remedies, or until death ensues, which is not long delayed.

THE CAUSES are the same as those of intermittent and remittent fevers.

The *prognosis* is always unfavorable. If by prompt measures, the paroxysms can be shortened, and their severity mitigated, with a restoration of nervous action, the case will, probably, terminate favorably.

TREATMENT. In this disease, prompt and energetic measures are demanded. The whole surface of the body as well as of the limbs should be well rubbed with stimulating applications. The Tincture of Capsicum, or Capsicum in powder, may be rubbed upon the surface by means of a piece of flannel or sponge moistened with cold water; or, a mixture of Alcohol two parts, and Aqua Ammonia one part, may be applied. Strong Mustard poultices should be placed on the back, over the whole length of the spinal column, as well as to the wrists and ankles; and in cases of nausea or vomiting, the Mustard should also be applied, (after considerable friction with the stimulants) over the stomach and entire surface of the bowels, and when it has produced redness and warmth, and can be borne no longer on the bowels, fomentations of Hops in water and vinegar must be rapidly applied, as hot as can be tolerated.

In the administration of internal remedies, there should be no delay; five grains of Sulphate of Quinia should be at once administered, and the dose repeated every hour or two; and, as frequently happens, the medicine will be immediately rejected from the stomach, when another dose must be imme-

diately given, and so continued. In addition to this, in obstinate cases, the following may be injected into the bowels, and should be retained there as long as possible:—Take of Sulphate of Quinia ten grains, Elixir Vitriol half a fluidrachm, dissolve, and add Tincture of Gelsemium, water, each half a fluidounce. Repeat the injection as well as the internal doses of Quinia as frequently as the urgency of the symptoms may require.

Quinia will be found to act more promptly when in a state of solution; and when there is no great irritability of the stomach it may be given in this form of fever, dissolved in Whisky or Brandy; and in every instance the use of the Sulphate of Quinia should be continued until the disease has yielded to it. The treatment of other symptoms occurring in the course of this form of fever, as well as the management of convalescence, will be the same as in the preceding forms of Bilious fever.

YELLOW FEVER.

THIS is especially a disease of warm climates, seldom occurring above 40° north latitude; it is rarely met with in country places, being confined almost always to large seaport towns, and cities. It makes its appearance during the latter weeks of summer, or in the commencement of autumn, and always disappears on the return of frost. It is endemic or common to southern cities, but may from certain circumstances, prevail as an epidemic in temperate climates, as in the cases of its presence in Boston, New-York, and Philadelphia. The disease is generally malignant in proportion to the heat of the season.

SYMPTOMS. The symptoms of yellow fever are very diversified, being at some seasons quite mild, and at others, quite unmanageable. Most frequently it is ushered in with a chill, or cold sensation of short duration; sometimes this symptom is absent. Severe pains in the head, back, and limbs, with, occasionally, nausea and vomiting from the commencement, and a sense of lassitude or weariness, are frequently present in the early period of the attack. At the commencement of the disease, there appears to be a regurgitation of bile into the stomach, which is ejected by spontaneous or excited vomiting; but as the disease progresses, and especially in the violent and dangerous cases, there is an evident deficiency of this secretion. As the febrile symptoms develop themselves, the pulse becomes full and quick, though sometimes it is slower than natural; the skin is hot and dry, often having a feeling of great constriction; the respiration is hurried, with frequent sighing; the eyes are red and watery, with an intolerance of light; the face is flushed, resembling, in some cases, that of an intoxicated person; there is a sense of tightness and oppression, or a burning pain at the stomach, with nausea, retching, and flatulence,—pressure over the region of the stomach usually occasions pain; the thirst is excessive, cold drinks being more generally demanded; the bowels are most commonly costive, and respond with difficulty to the action of purgatives, and the urine is scanty, turbid, and high-colored. The patient is excessively restless and fearful. One of the most tormenting symptoms is a constant wakefulness; it is seldom that even delirium comes to the relief of the patient to make him forget himself for a moment,—but he continues wide awake, night and day, with his reason and senses sound, and in a state of the most uneasy agitation.

As the disease advances, the pain across the forehead and eyes increases; the pain in the back and limbs becomes intolerably acute in many cases; the mind is much agitated and anxious, and sometimes a greater or less de-

gree of delirium is manifested; in some cases, there is a constant tendency to stupor. The tongue is usually moist, and coated with a whitish, or yellowish-white fur, and sometimes there is soreness of the throat, with a difficulty in swallowing. Occasionally the tongue is of a bright red color.

These febrile symptoms continue, more commonly for about thirty-six hours, when there is a gradual abatement of the symptoms, followed by a greater or less remission, or even a complete intermission, terminating in convalescence. Sometimes these continue only a few hours, being of longer duration in the mild cases, and very brief in the more serious. During the remission, it is frequently the case that the patient will sit up, with the delusive belief that he is well. But there will be certain symptoms present indicative of the continuance and aggravated condition of the disease, as:—an increased tenderness upon pressing over the stomach, a yellowish or saffron color of the face and eyes, instead of the previous redness, and which color ultimately extends over the whole body, the urine assumes a yellow tinge, and the pulse becomes depressed, in some even to forty beats in a minute. In dangerous cases, there will be some drowsiness, or coma. This stage may last from three hours to thirty-six, when it is succeeded by another class of symptoms, viz: those of depression.

The pulse sinks and is irregular and quick; the muscular prostration is great; there is a pain and sense of burning at the stomach, with more or less retching of a small quantity of a thick, green, viscid fluid; the skin assumes the peculiar yellow or bronzed appearance common to the disease; the respiration is slow, with sighing, and hiccough; the tongue is brown and dry, or red, glossy, and cracked; occasionally the teeth and gums are covered with sordes; the urine is natural or suppressed; and passive hemorrhages occur from various parts of the system, as gums, nostrils, bowels, &c., and from the extravasation of blood, purple spots, (*petechiæ and vibices*), are visible upon the surface. Accompanying this last symptom, is the vomiting, not only of everything received into the stomach, but also of a dark brown or blackish fluid, known as the *black vomit*. In very malignant cases this last symptom may occur on the first day of the attack. The heat and pain of the stomach now cease; respiration becomes slow, with hiccough; the breath is very offensive; the skin becomes cold and clammy; large quantities of dark and fetid matters are discharged from the bowels; the eyes become hollow or sunken; the countenance sombre or contracted and wrinkled; the pulse is almost quiescent; and at last the patient dies, either in convulsions, or a comatose condition. These are the usual symptoms, but they will be found to differ considerably in different patients, and at various seasons. Sometimes patients die without exhibiting the dark color of skin, black vomit and hemorrhage; and again in very malignant cases, it sometimes happens that the symptoms above named in the third or collapsed stage, are the first which give indications of the presence of the disease.

CAUSES. The causes of yellow fever are not well understood, although it is very probable, that they will be found to consist, as with the previous fevers, in a specific poison in the atmosphere; perhaps the conjunction of vegetable and animal malaria. Persons unacclimated to a yellow fever district, as well as those exposed to heat or cold, or who fatigue themselves by much exercise,—those who are intemperate or irregular in their habits, or who labor under depressing influences of mind or body, are more predisposed to the disease than others. The disease, it is said, may arise from the foul air of a ship, from infectious effluvia, or from putrefaction that sometimes takes place in the holds of vessels which have been neglected. Ordinarily, it is entirely confined to those who have recently arrived from a cold or tem-

perate climate, or who have been exposed to unwholesome air, to too much exercise in the heat of the sun, or to intemperance; when malignant it attacks indiscriminately. The young and plethoric are the most apt to be attacked.

Yellow fever is not contagious, that is, a person with the fever upon removal to a healthy district will not communicate it to others; but, in an infected district, where every person is exposed to the specific influence producing it, persons who otherwise might have escaped it, may become attacked by too close attendance upon those laboring under it, especially when it assumes a violent character.

The *prognosis* will be favorable when the primary fever is prolonged beyond the usual period, when a moderate secondary fever occurs, or when a mild perspiration takes place at any time from the fourth to the seventh day. The gradual cleaning of the tongue, cessation of nausea and vomiting, the absence of pain when pressure is made over the region of the stomach, a return of nervous energy, and a prompt susceptibility to the action of medicines, are all favorable indications. After the third stage, if, instead of a fatal termination, a secondary fever should set in it is favorable, inasmuch as it indicates that the vital forces are not completely exhausted. The unfavorable symptoms are, a short and severe febrile stage, insupportable pain in the forehead, back, and limbs, frequent and weak pulse, languid respiration, with heavy sighs, the eyes are bloodshot, yellowish-brown color of the skin, constant restlessness, an indifference to everything, hiccough, a ravenous appetite in the last stage, black vomit, petechial spots with hemorrhage, and suppression of urine. Sometimes patients have recovered even after having black vomit.

TREATMENT. At the commencement of an attack of yellow fever, an emetic is almost always indicated. Indeed, as all febrile symptoms occurring during an epidemic of this disease may be suspected to be its forerunners, the emetic should be given at as early a period as possible; and the agent which I prefer is the Compound Powder of Lobelia, administered according to the directions named in Pharmacy, Part III. In addition to the elimination of morbid or irritating matters in the stomach, it will give a shock to the nervous system which is always rendered torpid by the peculiar poison generating the disease, inciting it to an augmented action, promoting the functions of the liver and other secretory organs, determining the blood to the surface, and rendering the system more susceptible to the influence of other remedies. In those severe and malignant cases where the patient is almost immediately stricken down with the prostrating stage of the disease, emetics will be found less serviceable; indeed, in such cases, they are contra-indicated, as well as all other depletive or exhausting measures.

Some care must be employed in the use of a purgative, which is seldom indicated on account of the great irritability of the stomach and bowels, and which may be increased to an ungovernable extent by the imprudent administration of a purgative. Should, however, evident accumulations exist in the bowels, a mild cathartic may be administered, and that which I prefer is Castor Oil. Many years ago I was informed by an old physician, who had formerly had an extensive and successful practice in yellow fever, that he derived more benefit from the following purgative dose, than any other preparation; "indeed," said he, "as soon as it operated on my patients I considered them safe."—Take of good Vinegar, Castor Oil, each, half a wineglassful, Salt, a teaspoonful. Mix for a dose, and repeat it every hour until it purges. It appears to be a severe dose, but there is undoubtedly virtue in it; the salt, it must be recollected, is a neutralizer of malarial poison in the system.

During the febrile stage, while the skin is hot and dry, the whole surface of the body and limbs should be thoroughly bathed every hour or two with warm, weak ley water, to which a small portion of whisky has been added, using some degree of friction in drying. This will be found to have a very happy influence in allaying the more severe symptoms of the fever, and disposing the patient to sleep. In many cases, especially when the skin is very hot, frequent bathing of the surface with cold water, or with the above weak ley, cold, will be found more grateful, and more beneficial in abating the fever, than when warm fluids are employed. These bathings should be suspended whenever the fever diminishes, and renewed as soon as it returns.

Counter-irritation is always indicated early in the disease; strong Mustard poultices should be applied along the whole course of the spinal column, over the region of the stomach, to the feet and ankles, and to the wrists; every means should be promptly and energetically employed to arouse the nervous system, allay irritability of the stomach, and determine the fluids to the surface. (Previous to the application of these Mustard poultices, some practitioners place the feet and legs in hot water, but not so hot as to scald, allowing them to remain there for five or ten minutes; after which they place the patient in bed, and endeavor to produce free perspiration by hot drinks, and hot rocks, bottles of water, &c., in the bed, and placed at the feet, sides, axilla, &c. This course may be useful in some mild cases, but too much time will be lost in the severe ones by pursuing it, unless the mustard be applied at the same time.)

Internally, Sulphate of Quinia in doses of from four to six grains should be administered every hour or two, both during the febrile stage, as well as in its absence,* in order to neutralize the morbid cause of the disease, while at the same time acids should be freely drank, as lemonade, lime-juice, sour cider, vinegar, &c., and which should be kept cold by means of ice placed around the vessels containing them. A piece of ice frequently placed in the patient's mouth will prove very grateful and refreshing. In the febrile stage as well as in the stage of prostration or remission, should the stomach be so irritable as to reject the above medicine, it must be administered by injection, prepared as follows:—Take of Sulphate of Quinia, Tartaric Acid, each twelve grains, Lime-juice, or sour Lemonade, one fluidounce. Mix, and use for an injection, repeating the dose every hour or two, and causing the patient to retain it if possible, for some hours. Indeed, in malignant cases, it will be proper to use the Quinia, as above, both by mouth and by injection. Some practitioners, during the febrile stage, administer in connection with the Quinia, Tincture of Gelseminum, in doses of from half a teaspoonful to a teaspoonful every hour or two, and with manifest benefit. Knowing the utility of this agent in other fevers, I would suppose that cases might be frequently met with, in which its action upon the system in conjunction with that of the Quinia, would terminate in most happy results. But I should be inclined to use it with great care and much hesitancy in those cases where great nervous depression existed from the commencement of the attack, at least, until further trials have determined its true value in such instances. During the stage of remission or collapse, there should be no delay in the administration of the Quinia, and patients who, when in health, are naturally pale or anemic, should also take in connection with each dose of it, from three to five grains of either the Citrate of Iron and Quinia, or the Tartrate

* I am aware that this is contrary to the views of some practitioners, but I am thoroughly satisfied that the judicious employment of Quinia, even in the febrile stage, will always be found to produce a beneficial influence. I think, that instead of acting as a tonic, it exerts, in connection with its neutralization of malarial poison, a sedative action upon the whole system.

of Iron and Quinia. Oil of Turpentine has been found very useful in this stage of the disease; about ten or fifteen drops, with two or three grains of Capsicum, may be given every hour or two in some acidulated drink. The Turpentine may also be combined with equal parts of Olive Oil, and rubbed on the body and limbs with a moderate degree of friction. The drink in this stage should be acid, and when much prostration is present, requiring stimulants, ale, port wine, champagne or brandy may be given internally, and by injection, and the limbs and body should also be bathed with a mixture of good Brandy four fluidounces, Sulphate of Quinia half a drachm, to which, if necessary, one or two fluidounces of Oil of Turpentine may be added. The injection of Saturated Tincture of Prickly-Ash Berries, named on page 182, under Auxiliary Treatment, will also be found very advantageous.

For excessive pain in the head, derangement of the kidneys, suppression of urine, pain and distress of the bowels, and other urgent symptoms requiring relief, pursue the measures heretofore named under *Auxiliary Treatment* of fevers, page 180.

Should the patient become convalescent, great care must be taken to avoid a relapse. The diet should at first consist of prune, tamarind, or apple-water, with the addition of a little wine, and if there be considerable debility a strong beef tea is allowable; Indian meal gruel, mush and boiled milk, boiled rice, and other light and nutritious articles, should be used as food, gradually approaching the ordinary articles of diet, as the strength of the stomach will permit. Tonics should likewise be administered, as, a cold infusion of Virginia Snakeroot, with or without wine as the case may require; or, an infusion of the Shrubby Trefoil may be used instead. Other tonics may be used, as, a cold infusion of Quassia, Boneset, Golden Seal, &c. The convalescent should be kept quiet at first, and supplied with cool and pure air, and as strength will permit, exercise moderately within doors; if possible, remove at once to a healthy district as soon as it can be done safely. And pursue generally, the rules heretofore named for the management of convalescence from exhausting fevers.

The rules referred to in the Introduction should be rigidly adopted by all persons exposed to the infectious poison; removing at once to a healthy district if they are able,—if not, they should not expose themselves to the night air, nor to the early morning air, and at no time should they venture into the out door air on an empty stomach, nor when the system is laboring under fatigue or any depressing influence whatever; sudden changes of temperature should be avoided, as well as intemperance, or other excesses; exercise should be moderate, and never in the sun; food should be nourishing, and easily digestible, but not stimulating; bowels and kidneys should be kept regular, but not over-tasked; body should be kept clean by daily bathing; sleep should be taken in the highest room in the house; and the house should be thoroughly cleansed from garret to cellar. The clothing should be comfortable, not too warm nor too cool.

The public authorities should also attend to the condition of the town or city, inspecting all backyards, cellars, sewers, ponds, and the like, wherever putridity or decomposition is going on, and be rigid in their laws requiring the community to cleanse or remove them. Large fires are sometimes beneficial, when built in many places at once, or, when made over the marsh and swampy places which generate the poison.

TYPHUS FEVER.

THIS disease has been called by several names, as *nervous fever, jail, camp, or ship fever, putrid fever, spotted fever, congestive fever, &c.* However, I believe there is a marked difference between the congestive fever of this country, and ordinary typhus, as well as between spotted fever and typhus. It more commonly attacks those of weak constitutions, and is apt to be produced in damp, dirty, filthy places, jails, prisons, hospitals, ships, and in badly ventilated houses. Unlike typhoid fever, it may occur at any season of the year, and all ages are equally obnoxious to it. It is not met with so frequently as in former years, probably on account of the greater attention to cleanliness and ventilation.

SYMPTOMS. Typhus fever is divided into two forms, the mild and the malignant, and it will be well to explain the symptoms common to each form. The mild form commences slowly and imperceptibly, with general languor, dejection of mind, loss of appetite, alternate chills and flushes, dulness and confusion of thought, face pale and sunken, and the eyes dull and heavy. As the disease progresses, there is an oppression at the chest with difficult breathing, frequently headache, giddiness, confusion of intellect, and great nervous prostration, the patient often fainting when he attempts to sit up. The pulse is small, feeble, and irregular; the tongue at first moist and covered with a whitish fur, becomes red, or coated with a brownish substance, and the teeth are often incrustated with the same. Thirst is seldom complained of. A cold, clammy, perspiration breaks out on the forehead and back of the hands, while the palms are quite hot. The urine is pale and watery. As the disease advances, the heat and other febrile symptoms increase, the cheeks assume a dull red, dusky, or dingy hue, the urine becomes high-colored; bowels costive; sometimes, but rarely, a diarrhea comes on; there is a low, muttering delirium, seldom of a raving character; a starting and twitching of the tendons; dilatation of the pupils, involuntary motion of the muscles and tendons; picking at the bedclothes, or grasping at the air; coldness of the extremities; hiccough, and finally dissolution. It may be known from the malignant form by the more gradual character of the attack, and the mildness of the symptoms.

In malignant typhus, the attack is more sudden; the patient is hardly able to stand, and from the first moment seems ready to faint without any apparent cause. There is an intense pain in the head; strong pulsation and throbbing in the temples; sometimes delirium, and nausea. The eyes appear full, heavy, yellowish, and sometimes inflamed; the face presents a dingy or livid appearance; the tongue is dry, parched, and coated brown or yellow; the respiration is laborious, with deep sighs, and the breath is hot and offensive; there is a loss of hearing, and sometimes of sight. The urine is pale; bowels costive; and the pulse quick and small, or fluttering and irregular. Sometimes there is great heat, pain, and heaviness at the pit of the stomach, slightly increased by pressure, and vomiting of a dark fluid substance. As the disease progresses, these symptoms increase; the skin becomes dry and of a pungent, biting heat; the pulse increases in frequency, being frequently over 190 beats in a minute; thirst is greatly increased; the tongue, mouth, lips, and teeth are covered with a brown or black tenacious fur; and the speech is inarticulate, and scarcely intelligible. From the fourth to the eighth day, dark petechial spots frequently appear on the surface of the body; they are of small size, not elevated, and imperfectly disappear on pressure; sometimes this symptom is absent.

Finally, symptoms of putrefaction manifest themselves, the breath becomes highly offensive, and the body exhales a peculiar ammoniacal odor; the pulse sinks; the urine gives a dark and fetid deposit; the discharges from the bowels, whether obtained by medicine or not, are dark and offensive, and toward the termination pass off involuntarily; twitchings of the tendons; coldness of the extremities; hemorrhages from various parts of the body; hiccough; excessive stupor or insensibility, and death.

In many of its symptoms this fever resembles the typhoid, but may be discriminated from that by the characters named under the head of "Typhoid Fever," which see.

The *prognosis* is always uncertain. If on or about the 7th, 14th, or 21st days, there is an abatement of the febrile symptoms, the thirst becoming less, the tongue becoming moist and clean, the pulse stronger and more natural, respiration more free, a gentle perspiration over the whole surface of the body, urine free and turbid, bowels loose, stupor giving way to more mental activity, with tumors in the throat, under the arms, or in the groins, or scabby sores appearing about the lips, nose, and behind the ears, a favorable issue may be expected. But, on the contrary, if the nervous and muscular prostration increases, respiration becoming more laborious, with difficulty of swallowing, constant restlessness, profuse and fetid perspiration, or excessive diarrhea, the discharges being very offensive, trembling of the tongue when put out, or an inability to protrude it, dark-colored spots, pulse sinking, hemorrhages, mutterings, twitchings of the tendons, picking at the bedclothes, hiccough, and loss of sight and hearing, a fatal termination will be inevitable.

CAUSES. The causes of typhus fever are not well understood. It seems to be confined to filthy and uncleanly places, and on this account is more common among the poor, in jails, ships, hospitals, &c., especially when these places are not kept clean and well-ventilated. Exposures to the effluvia from decomposing animal or vegetable matter, use of tainted or putrid animal food, and, under proper circumstances, intemperance, late hours, depressing passions, &c., are apt to give rise to the disease.

With regard to the contagiousness of typhus fever, there is much discordance of opinion among medical men; but as there are strong reasons advanced in favor of its contagious character, it will be better to act as if this were the case, until the contrary has been satisfactorily proven.

TREATMENT. The main object is to sustain the strength, and prevent the disease from passing into the stage of putrefaction. For this purpose, the first thing to be done, is to remove the patient from the unhealthy apartments in which he may reside, to a large, clean, and well-ventilated room, and if this cannot be done, the house he inhabits should be at once cleansed throughout. All his clothing should be removed, and his body well washed with soap and warm water, or a warm weak alkaline solution, and after perfectly drying him, place him in a clean and dry bed, but not a feather bed. In the early part of the disease, the administration of an emetic will almost always be beneficial; though it will be improper to give this class of agents as the disease progresses, or in the malignant form of it. The emetic advised is the Compound Powder of Lobelia, given as heretofore directed. In the mild form of the fever, the emetic may be followed by a purgative, but this should be avoided in the malignant form; the Compound Powder of Jalap, or the Compound Powder of Leptandrin, may be given in doses sufficient to produce about two gentle evacuations.

During the febrile symptoms, the body should be frequently bathed with a warm, weak, ley water, or, if the skin be excessively hot, it may be used

cold. And this frequent bathing of the whole surface, will be found the most important part of the treatment during the febrile stage. When there is much pain in the head, or delirium, or when the febrile symptoms run high, Mustard poultices should be applied to the feet, and along the whole length of the spinal column, being careful not to allow them to blister the skin, but simply redden it; and cold applications should be made to the head, as of vinegar and water, or vinegar, water, and salt. Although thirst may not be complained of, yet it is very important that the patient should be made to drink of cold acidulous liquids, as lemonade, tamarind water, &c., and it will be found that, notwithstanding his apparent indifference to drinks, he will, when they are offered to him, greedily partake of them. They have a tendency to prevent putrefaction.

The following should be given, in order to produce moderate evacuation from the bowels, daily:—Take of Blackroot, (*Leptandra Virginica*), four ounces; Wild Indigo root, half an ounce; mix, and make a strong infusion, by steeping in four pints of boiling water; when cold, administer a table-spoonful every hour, or sufficiently often to produce the desired effect. The Blackroot thus exhibited has an influence upon the system not to be obtained from Leptandrin, which latter article is far inferior, in this disease, to the crude root.

For the restlessness which frequently accompanies this disease, I prefer an infusion of Scullcap, or Scullcap and Ladies' slipper, to any thing else. Opium, or any of its preparations, are seldom indicated, and, when given, often occasion more harm than benefit. When severe headache is present, should the means heretofore recommended be of no benefit, the following may be used:—Take of Fluid Extract of Scullcap, Fluid Extract of Valerian, each, one fluidounce; Tincture of Aconite root forty-eight drops; mix. The dose for an adult is a teaspoonful every hour or two; children in proportion. This may likewise be used during the low stage, when there are spasmodic twitchings of the muscles. Excessive wakefulness may be overcome by the use of Lactucarium, Lupulin, or a combination of these two; the powdered root of Ice-plant, (*Monotropa Uniflora*), will be found very valuable in causing sleep, it may be given in doses of half a drachm, and repeated every hour or two.

In the malignant form of the disease, in addition to what has already been advised, the following should be exhibited during the fever stage:—Take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm, Tincture of Black Cohosh root fourteen fluidrachms. Dissolve the Quinia in the Elixir Vitriol, and then add the Tincture of Black Cohosh. This may be given in doses of twenty drops every hour, in some cold water, or cold infusion of Scullcap. And this preparation may also be given with advantage during the stage of prostration, combining it with the drinks at that time administered to the patient. Though it may be proper to state that the beneficial influence of Quinia is not so well marked in typhus, as in typhoid fever.

The various urgent symptoms which may appear during the progress of this disease, are to be treated the same as in the preceding-forms of fever. (See Auxiliary Treatment of Fevers, page 180.)

The stage of prostration must be narrowly watched, and the same means adopted to sustain the strength until the vital force has rallied, as recommended heretofore under remittent and yellow fevers; preferring, when they will answer, ale and porter to the more stimulating liquors. And whenever the system has been aroused from its sinking condition by these stimulants, they should be omitted, and nourishing fluids exhibited, as very concentra-

ted mutton tea, or beef tea; returning to the stimulants again on the first symptoms of sinking. The injection of a Saturated Tincture of Prickly-Ash berries, will be found remarkably efficient during the low stage of typhus; see page 182. Putrid symptoms may be met by the administration of Brewer's Yeast, given in table-spoonful doses, every hour or two throughout the day; this is both laxative and antiseptic. Or, diluted Pyroligneous Acid may be given; or, the means named on page 182.

In the course of this disease, the room should be well ventilated, without exposing the patient to a current of air; the covering should be light, but not too cool; the clothing and bedlinen should be frequently changed; the mouth, lips, and teeth, should be cleansed two or three times a day with vinegar, or vinegar and water; and one of the disinfecting preparations named on page 137, should be kept more or less constantly in the room. The condition of the bladder should be frequently attended to, for it will happen, that even when this organ is filled, the patient will evince no disposition to empty it, and it may become necessary to remove the urine by means of a catheter. The patient must be kept as quiet as possible, and all visitors and unnecessary attendants positively prohibited from entering the room. For nourishment, the patient may use thin gruel, toast-water, barley-water, gum Arabic-water, and thin panado, but on no account must he be allowed solid food; and even wine, or similar stimulants, mutton or beef tea, &c., are improper, unless indicated during the prostrating stage.

During convalescence, the same rules must be observed in diet and regimen, as were named in the articles on remittent and yellow fevers. Being always extremely careful not to allow too early a resort to solid animal food, after a recovery from either typhus or typhoid fevers.

TYPHOID FEVER.

THIS disease has been called by various names, as *nervous fever*, *abdominal typhus*, *common continued fever*, *enteric fever*, *dothin-enteritis*, &c., and for a long time it was confounded with typhus fever, which, in many respects, it strongly resembles. The name "typhoid fever," has also been erroneously given by many practitioners, to those remittent fevers which are attended in the last stage with a low, or typhoid condition. Typhoid fever is more liable to prevail during the fall and winter months, and persons over thirty years of age are less liable to contract it than those who are younger. It is much more frequently met with than typhus fever. I consider it an eruptive fever.

SYMPTOMS. Typhoid fever comes on very gradually, the patient hardly being able to determine the commencement of the first symptoms. For a period of time varying from two days to two or three weeks, there will be an indefinite sensation of indisposition, accompanied, perhaps, with a slight disturbance of the mind, or a dull heavy sensation in the head; this feeling is eventually followed by weariness, languor, general uneasiness, a vague sense of soreness in the limbs, with an aversion to any kind of exercise. These, with a slight headache, alternate flashes of heat and cold, and impaired appetite, lead him to suppose that he has "caught a severe cold." Constipation is present, or, perhaps, a disposition to diarrhea.

As the symptoms develop themselves, the skin becomes dry and hot, with occasional flashes of a chilly sensation along the back, rarely amounting to rigors, the pain in the head increases, the pulse is accelerated, the ton-

gue scarcely coated, if at all, considerable thirst, and frequently nausea and vomiting are present. Epistaxis, or bleeding from the nose, is not uncommon even at this early stage.

As the fever stage advances, the skin becomes hot, dry, and harsh; the pulse frequent, hard, and wiry; rarely over 100 beats in a minute; headache still severe; great thirst; bowels disposed to diarrhea, and easily acted on by medicine; nausea, dark-red and shining face, but not so dark as in typhus; pains in the bowels increased upon pressure, and a tendency to a tympanitic swelling of the abdomen; tongue but little coated, or red at the tip and edges; and symptoms of pulmonic inflammation, as cough, &c. Restlessness and uneasiness is quite common, but some rest or relief is generally obtained soon after daylight. It is not uncommon to observe perspiration on the forehead, face, and neck, appearing often during the day, and at irregular periods. It will be found that in this disease there is a tendency to imperfect remissions every day, or every other day, according to the periodical type it assumes; thus, there will be found at such times a slight decrease of the fever, and a diminution in the severity of its symptoms, and which remissions are more commonly met with in the early part of the day, while toward evening the symptoms reach their height.

The symptoms increase in intensity; the tongue is drier, red at the tip, and perhaps dark-colored in the center, and when thrust out it has a tendency to curve upward at the tip and sides; the throat is dry and sore, with more or less difficulty in swallowing; fetid discharges of a watery consistence, and a dirty-yellow appearance, take place from the bowels, and any purgative medicines increase the difficulty. These discharges will generally be found to contain red specks floating among them, resembling minute grains of bloody mucus. Tympanitic distension of the abdomen, in which it is swollen and tense like a drum, is a common and prominent symptom, with tenderness or pain on pressure, more especially on the right side, as well as a gurgling sound at the same time. The patient usually lies on his back, having his knees bent upward, and will be constantly sliding toward the foot of the bed. About the ninth day, there will be observed upon the abdomen small, oval, rose-colored spots, like flea-bites, which are slightly elevated, and which momentarily disappear on pressure; these *petechiae*, as they are called, ultimately spread over the whole body to a greater or less extent. About the same time, *sudamina* will be observed upon the neck and chest,—these are small vesicles containing lymph, and which may readily be detected by the roughness they impart to the skin when the hand is lightly passed over its surface.

The symptoms of nervous derangement now become more marked; there may be a disposition to stupor, but more frequently a wild delirium, preceded by an augmented brilliancy of the eyes; there is a ringing, or whizzing noise in the ears; the eyes become full, red, and can hardly distinguish objects; the tongue is tremulous, and cannot be readily protruded. This condition continues for several days, increasing in severity until finally the typhoid symptoms present themselves, being similar to those observed in other forms of fever. The patient lies in a stupid or comatose state, from which, however, he may be momentarily aroused; he lies with his mouth open, and breathes hard and heavy; the tongue is very dry, and the teeth are covered with sordes, (a dark substance;) the pulse gradually becomes more feeble and frequent, though sometimes it may be almost natural in its number of beats; the feet and legs are cold, while the head is usually hot; the breath, as well as the exhalations from the body, are very peculiar and offensive; involuntary motions of the muscles; picking at the bedclothes,

or catching in the air; involuntary discharges from the bowels; frequently hemorrhage from various mucous surfaces, especially from the intestines; hiccough; a great liability of the skin to slough; a cold, clammy sweat over the whole surface, and finally death. Sometimes the patient dies in agony, with severe physical and convulsive efforts. The above are the usual symptoms, and the general course pursued by this fever, when it proves fatal; however, the order of the symptoms and their duration, as well as their severity, will frequently be found to vary.

CAUSES. Typhoid fever is probably generated by some animal malaria. It is, like typhus fever, met with in prisons, hospitals, ships and other places where many persons are crowded together, where the apartments are not thoroughly ventilated, and not properly cleansed. But, whatever may be its cause, the disposition to an attack may be increased by the following circumstances, viz:—debility, great fatigue, violent exercise, insufficient or unwholesome food, late hours, fasting, intemperance, debauchery, excessive evacuations, filthiness, and mental or physical depressing influences. In relation to its contagious character, the same remarks apply to this, as are given in typhus fever.

The principal *discriminating marks* between typhus and typhoid fevers, are as follows:—

IN TYPHUS FEVER.

IN TYPHOID FEVER.

1. May occur equally at any season of the year, and at any age.
2. Bleeding from the nose rarely happens.
3. Capillary congestion of the face and body, of a dull red, dusky, or dingy hue.
4. Sometimes tenderness on pressure over the abdomen.
5. Low, muttering delirium; the patient muttering to himself all day; and on attempting to get out of bed, is easily restrained.
6. Tympanitic distension of the abdomen seldom present.
7. Bowels costive, rarely loose.
8. Pulse very frequent, from 100 to 160 beats in a minute.
9. Sometimes a dull red eruption, of small size, not elevated; the redness imperfectly disappearing on pressure.
10. Deafness is common.
11. Tongue, mouth, teeth, and lips covered with a dark fur, or sordes.

1. Occurs more frequently during fall and winter, and is less liable to attack those under thirty years of age.
2. Bleeding from the nose is common; frequently being among the first symptoms.
3. Sometimes capillary congestion of the face, with considerable redness.
4. Always tenderness on pressure over the abdomen, especially the right side, and accompanied with a gurgling sound.
5. Active delirium, requiring forcible restraint; talks to himself loudly and vehemently.
6. Tympanitic distension of the abdomen, always present.
7. Bowels tending to diarrhea; sometimes constipation.
8. Pulse frequent, rarely over 100 beats in a minute; never over 120.
9. Almost always a rose-colored eruption, oval, slightly elevated; the redness disappearing momentarily on pressure. With sudamina.
10. Rarely deafness.
11. Teeth covered with sordes; seldom other parts of the mouth.

The *prognosis* is usually favorable; though mild cases are not always free from danger, and patients frequently recover, even when the lowest symp-

toms have appeared. The unfavorable symptoms are, unabated depression of the powers of the mind, or constant delirium; deep and profound sleep; stertorous breathing; great twitching of the tendons; immoderate discharges from the bowels; copious sweating; great debility and exhaustion; very frequent pulse; excessive tympanitic swelling of the abdomen; and hemorrhage, especially from the bowels.

TREATMENT. As in typhus fever, the principal indication is to husband the strength of the system by mild measures, and at the same time endeavor to remove or neutralize the morbid poison producing it. The patient should be placed in a cool and well-ventilated apartment, not, however, allowing a current of air to pass directly upon him, and measures of cleanliness pursued as named in treatment of typhus fever.

In the early part of the disease, should there be nausea or vomiting, occasioned by irritating matters in the stomach, a mild emetic may be given, as the Compound Powder of Lobelia. But on no account is an emetic to be given at any other period, as all exhausting or depleting measures are decidedly injurious. As to purgatives, they are seldom required, and should there be accumulations in the bowels, it will be the better plan to remove them, if possible, by injections; for, from the great tendency to diarrhea, and to hypercatharsis from the use of physic, it will be safer to risk the drawbacks which may arise from intestinal accumulations, than to cause purgation. However, should there be obstinate constipation, with torpidity of the liver, and the constipation cannot be removed with an injection, the following may be administered:—Take of Blackroot two drachms, Rhubarb one drachm, boiling water half a pint; infuse the roots in the water for an hour or two, strain, and give a table-spoonful every hour until a mild laxative effect is produced. And great care must be taken, not to produce too much purgation, as well as in relation to a repetition of the medicine as a laxative. The patient should never be allowed to stool or urinate, in the erect position, as long as there is any inflammation or pain or tension of the bowels; a bedpan must be made use of for these purposes.

During the fever, it will be proper to bathe the body and limbs frequently with a warm, weak ley water, as in the previous fevers; applying tepid or cooling applications to the head when hot, when there is pain in the head, or, when delirium is present, together with Mustard poultices to the feet, and along the whole length of the spinal column.

Internally the preparation of Sulphate of Quinia, Elixir Vitriol, and Tincture of Black Cohosh, named under the treatment of typhus, should be given in doses of twenty drops every hour, in some cold water, or infusion of Scullcap. Should there be a very irritable condition of the nervous system, Valerianate of Quinia may be substituted for the above, in doses of half a grain every hour or two, with an infusion of Hops and Scullcap. It is generally advised not to give Quinia during the febrile excitement, but I exhibit it, and have always found beneficial effects to arise therefrom. Many practitioners prescribe the Quinia, in this disease, in much larger doses than I have named above; but I have never had occasion to increase the quantity, the preparation, having, in my hands, almost invariably produced the most desirable results.

Diuretic medicines are very useful, especially during the presence of fever; should the tongue be red, indicating irritation of the stomach, an infusion of Marshmallow root and Peach leaves, may be exhibited freely; or, the Hair-cap moss, in infusion; Cleavers and Mullein are also unirritating diuretics. For constant drink the patient may use cold water, an infusion of balm, lemonade, tamarind water, or other acidulous draughts, as he may prefer; these will allay thirst, and relieve the dryness of the mouth.

Diarrhea may be favorably influenced by the internal administration of Geraniin, or Tannic Acid, one or two grains, to be repeated every hour; or, Oil of Turpentine may be given in doses of six or eight drops, repeated every hour or two; and these may also be administered by injection. When the discharges are mucous, or hemorrhagic, some authors recommend the use of Nitrate of Silver, in doses of from one-eighth to one-twelfth of a grain, repeated every three hours; omitting its use after the eighth dose. It is said to exert a very beneficial influence upon the whole system, as well as upon the discharges. I have never used it.

For the pain and tympanitic swelling of the abdomen, fomentations of Hops, Lobelia, and Tansy, should be applied over the abdomen, frequently renewing them, not permitting them to remain on when cool, and the patient should not be made uncomfortable by applying them so wet as to dampen his bed. Oil of Turpentine added to them, a teaspoonful or two, will be found very advantageous in many instances. These fomentations must be continued until pressure can be made upon the parts without causing pain or tenderness, or, until the stage of prostration comes on, when they must be dispensed with. In addition to these measures, the following injection will be found of great benefit:—Take of Sulphate of Quinia five grains, Elixir Vitriol fifteen drops, mix and dissolve the Quinia, and add Tincture of Prickly-Ash berries a fluidrachm, Oil of Turpentine half a fluidrachm; mix. This is to be injected into the rectum, and retained there by compress, or otherwise; and it should be repeated every hour or two according to the urgency of the symptoms. Should there be considerable irritation of the lower bowels, with tenesmus or bearing down and an ineffectual desire to stool constantly, a few drops of Laudanum, say ten or twenty, may be added to the above injection, and repeated as required. When connected with diarrhea, the above named astringents may be added to the injection, for the purpose merely, of lessening the number of enemas given.

Other urgent symptoms which may appear during the progress of the disease, as well as the stages of prostration and convalescence, are to be treated the same as mentioned under the head of Typhus Fever.

SPOTTED FEVER.

THIS disease is supposed by many medical men, to be a species of typhus, or congestive fever. It appeared in this country in 1806, in the town of Medfield, Massachusetts, and raged as an epidemic in various sections of New England, for several years, proving very fatal. At present, it appears to have become extinct, or at all events, to have disappeared from among us.

SYMPTOMS. Dr. Thacher says:—"The invasion of the disease is generally sudden and violent. The patient is seized in the midst of his usual labors, and oftentimes is struck down suddenly, almost as by a stroke of lightning. The first symptoms are exceedingly various, scarcely two cases resembling each other, and the diversity of symptoms are not to be comprised in any enumeration. The disease often commences with shifting pains sometimes beginning in one joint, or one limb, in the side, back, neck, or head, either a sensation like the stinging of a bee, or most excruciating pain moving from place to place, with great violence, and is often confined to one side of the body. The pain in the head is often so intolerably severe, that it is compared to the beating of hammers upon the part. Partial loss of sensibility, numbness and paralysis of the limbs, deafness, dimness of sight, or total blindness; delirium, either mild or furious, stupor and coma and occasion-

ally spasms and convulsions. There is great prostration of strength, sometimes accompanied or followed by severe chills; dry and pale skin, eyes dull and glassy, pupils contracted, and again suddenly dilated; the tongue white at first, and assumes a reddish color; face livid, with paleness about the mouth; countenance anxious and distressed. The body becomes cold, respiration very laborious, pulse small, feeble, and irregular; great oppression and faintness, with indescribable distress about the precordia; eructations, nausea, and vomiting, more or less obstinate. Sometimes death takes place in the first twenty-four hours. In the second stage, about the third day, the pulse becomes more full and regular, the skin warmer, countenance flushed, respiration short and very difficult, eyelids swollen, staring eyes, with restlessness, anxiety, and delirium." Large spots appeared in various parts of the body from a scarlet to a black color, and bleedings were frequent from different parts of the body. Sometimes there were no spots at all, and, in many cases the patient died before fever could form.

CAUSE. The cause is not known, though supposed to originate from some peculiar poison in the atmosphere.

TREATMENT. It is stated that more patients were cured, by the administration of active diaphoretics, than by any other treatment. I would therefore advise the use of the Compound Tincture of Virginia Snakeroot, in teaspoonful doses, every half hour, until perspiration ensued; at the same time drinking freely of a warm infusion of Balm, Pennyroyal, Spearmint, or other similar agents. And probably, the Spirit vapor bath, or the Lime bath would also be found useful. In addition to this, it will be proper to pursue the same course of treatment for the several symptoms, as laid down for Congestive Fever, which see.

INFANTILE REMITTENT FEVER.

CHILDREN from birth to the fifth or sixth year, are especially liable to this disease. Its attack is very gradual, and is sometimes attended with looseness, at others with obstinate constipation.

SYMPTOMS. The approach of infantile remittent fever is insidious, and various in its forms. Generally, there is some degree of fever for many hours, or even for several days before the severer symptoms come on. The child is fretful and thirsty; the lips are dry and parched; the hands hot; the breath short; the head warm and painful; and the pulse frequent, often 120 in a minute. In the night the sleep is disturbed by startings, and the thirst is so troublesome that the little patient cries out constantly for water, and scarcely has it been given, ere the mother is again aroused by the same plaintive cry. The appetite is lost; the bowels are either costive, or loose, with slimy, mucous discharges. Some children are drowsy and stupid, and some are unable to speak. During the day there are several slight accessions of fever, during which the child is usually drowsy; in the intervals of these paroxysms, he appears tolerably well, though at times more peevish than usual.

These symptoms manifest themselves, more or less, for eight or ten days, when the heat of the body, and especially of the forehead, is augmented; the skin is very dry; the pulse increases to 140 in a minute; the cheeks become reddened, and a kind of stupor comes on, so that little or no pain is complained of, unless the child is questioned particularly, when it places its hand on the belly, or on the forehead. The child picks almost constantly at the skin of the lips, nose, and angles of the eyes. The tongue

in a little time becomes foul; and sometimes there is a morbid craving for food, instead of the previous loss of appetite. The stools grow worse, being either fetid, dark-colored, pitchy kind of discharges, or thin, green, and curdly, sometimes mixed with blood. Sometimes worms are found in not only the stools, but also in the matter vomited from the stomach. The drowsiness is often exchanged for a state of excitement, and the child laughs and appears in good spirits, though its flushed countenance, and heated, dry skin, proclaim, but too truly, the presence of disease.

But the fever does not continue alike all the day; there is generally a remission toward the morning and the evening, when the patient is comparatively cool; and this remission is more marked if the child be taken into the open air. But as the day or night advances, the fever returns, bringing again its distressing symptoms of general disorder. When the disease has thus continued for many days, unchecked by the treatment pursued, delirium comes on; the child is with difficulty roused to consciousness by the voice of its parent; the debility is very great; the body wastes away; the strength is exhausted; the belly swells; stupor increases, and death closes the scene.

CAUSES. It most usually attacks those of weak constitutions, of delicate stomachs, during dentition, &c.; probably the only cause lies in the condition of the digestive organs. Some suppose it to be connected with malarial or morbid matter in the atmosphere.

This fever may be mistaken for dropsy in the head; but in this latter there are occasional screamings, with much tossing of the hands above the head, intolerance of light, dilatation of the pupil of the eye, or, more or less squinting, while in infantile remittent fever, these symptoms are absent. In this fever the appetite is generally lost, while in dropsy of the head the child will partake of whatever is given him.

PROGNOSIS. The prognosis in this disease is almost always favorable, as it soon yields to proper treatment. Occasionally, however, when there is a lack of vital stamina in the constitution the child will continue to sink, manifesting symptoms of great debility, stupor or delirium, swelling of the abdomen, and frequent but very weak pulse.

TREATMENT. At the commencement of the fever, a gentle emetic may be given, both for the purpose of cleansing the stomach and arousing the nervous system; the Compound Tincture of Lobelia may be administered for this purpose, according to the directions in Pharmacy, Part III., which see. This should be followed by a purgative dose, as, the Compound Tincture of Senna, and which may, if required, be repeated in two or three days. The body should be bathed with warm, weak ley water, several times a day, when the fever is present; and Mustard poultices should be applied to the feet, and along the whole course of the spinal column. The child may drink warm infusions of Balm, Catnip, or Elder-flowers, and, if the fever be very severe, from five to twenty drops of the Compound Tincture of Virginia Snakeroot, according to the patient's age, may be added to its drink, and repeated every hour or two. Cold water may also be allowed, when called for. But when there is much irritation of the stomach, mucilaginous diuretic draughts will be found the best, as an infusion of Marshmallows and Peach leaves; and Mustard poultices, or bruised Garlies or Onions, should be placed over the region of the stomach. When there is much pain in the head, cloths wet with water and vinegar may be applied, and Mustard, or bruised Garlies to the soles of the feet.

Sometimes there is considerable spasmodic action, which will usually be overcome by warm baths; if it should amount to actual convulsions, em-

ploy the Tincture of Lobelia and Capsicum, both by mouth and by injection. It may be given in doses of from ten to thirty drops, in mucilage, according to the child's age; and about a teaspoonful or two in a table-spoonful of starch water, injected into the rectum. These may be repeated in fifteen or twenty minutes, if required.

When there is much vomiting, and the ejected fluid is of an acid nature, the Compound Syrup of Rhubarb and Potassa, may be given with advantage.

During the remissions, the combination of Quinia with Tincture of Black Cohosh root, as mentioned in formula 1, page 190, in the treatment of intermittent fever, should be given in doses of five or ten drops, in water, and repeated every hour, omitting it only during the height of the fever, and commencing its use as the fever abates. This may also be given for a short time after convalescence has ensued.

During the fever, the diet should consist of barley-water, toast-water, rice-water, prune tea, and apple-water; but during convalescence, it may be improved by the addition of arrowroot, sago, milk, or light vegetable food; and with these some mild tonic may be given, as, an infusion of equal parts of Colombo, Gentian, and Chamomile flowers; or, an infusion of Shrubby Trefoil. Particular care should be paid to the bowels to keep them regular, and to the food, that the stomach be not overloaded. Flannel should, in every case, be worn next the skin, and a change of air cannot be too much insisted on, as it has been often highly beneficial in removing the fever rapidly, in cases where every other remedy had been used for the previous six or eight days, with scarcely any other prospect than a fatal termination of the case.

HECTIC FEVER.

THIS fever is generally symptomatic of some other disease, particularly of tubercular consumption, and arises from an absorption of pus in this and various other diseases; a persistent irritation of any obstinate local affection upon the system, may likewise occasion it.

SYMPTOMS. It is characterized more particularly by emaciation; soft, quick, and small pulse; flushes of the face especially after eating; difficult and laborious respiration; burning sensation in the palms of the hands and soles of the feet. These are soon succeeded by a full, hard, and frequent pulse; urine copious, high-colored, depositing a red sediment; the appetite varies; the tongue is clean and usually moist; sometimes the whole body of the tongue is red, at others only its edges, and when about to prove fatal, it is not uncommon to observe aphthous sores on the tongue and gums—in some instances the papillæ are enlarged; the cheeks become flushed with a circumscribed redness, which is more commonly observed every afternoon; profuse, debilitating sweats take place, either toward midnight, or early in the morning, and are more often confined to the head and upper part of the body; flashes of heat and chills are not uncommon. In the latter stage diarrhea supervenes, which may appear at intervals, alternating with the sweats; there is usually a diminution of the perspiration when the diarrhea is present. The fever is remittent in its character.

TREATMENT. Whether hectic fever arises from the absorption of pus, or other cause, the original disease must be removed, before the fever will cease. But when the primary malady cannot be cured, the severity of the fever may usually be palliated by proper treatment.

In many cases, ten or twenty drops of Elixir Vitriol, taken three or four

times daily, in a wineglass half-full of water, will be very useful. A decoction of Crawley root, drank several times through the day, has likewise been found very serviceable. A mixture of Gallic Acid five grains, and Muriate of Morphia one-eighth of a grain, has also afforded considerable benefit, in the night sweats of consumption. Equal parts of White weed, Beth root, and Wild Cherry bark, made into a strong infusion, and drank freely through the day, has likewise proven efficacious. At the Brompton Hospital, England, the most benefit has been derived from a pill composed of Extract of Hyoscyamus, Oxide of Zinc, four grains of each; mix; of these, one, two, or four, may be taken daily. Many very severe cases are mitigated by a mixture of Tannic Acid, Nitric Acid, and Lupulin; administered internally.

But whatever agent is given internally, the surface of the body must also be attended to; bathing it with a mixture of water two pints, Alcohol one pint, Tannic Acid four drachms, Essence of Cinnamon four fluidounces, will be found of much advantage; rubefaction must not be produced, but only an agreeable glow and dryness of the skin. This is best used at noon and night, and also on the first appearance of the sweat. Acetic Acid, water, and Tannic Acid, mixed together, have also been used as a lotion; likewise Olive Oil, in some cases.

The diet should be nutritious and of a non-stimulating character, and great care should be taken not to oppress the stomach with either food or medicine. Moderate exercise in the open air, when this can be done, will prove decidedly beneficial; if this cannot be done, the exercise must be taken within doors, being proportioned to the strength and capability of the patient. The diarrhea that sometimes attends this fever, may frequently be relieved by the following:—Take of prepared Charcoal two table-spoonfuls, Nitrate of Bismuth one drachm, strong decoction of Logwood half a pint; mix. Of this give a table-spoonful every hour, stirring it well each time before taking, as the articles do not combine chemically with each other.

ERUPTIVE FEVERS.

ERUPTIVE or exanthematous diseases are usually characterized by various symptoms of fever, as heat of the surface, rapid pulse, nausea, vomiting, &c., and the development at a later or earlier period of an eruption upon the surface of the body. Generally, they attack persons but once in their lives, though instances have been met with where even smallpox has attacked the same individual at three separate periods of life; and similar instances have been met with in the several other forms of eruptive diseases.

Some of the diseases grouped under this head by nosologists, do not exactly correspond with the brief definition given above, but it would be useless in the present work to form a new classification. I have already remarked that I think typhoid fever should be ranked among the eruptive diseases.

SCARLET FEVER, OR SCARLATINA.

SCARLET fever is known in some sections of country, by the name of "*Canker-rash*." The term "*Scarlatina*," said to have been introduced into medical nomenclature by Sydenham, is employed to designate a disease, the general character of which consists in fever, usually preceding, by a day or two, the

appearance of a scarlet efflorescence of the skin, and of the mucous membrane of the mouth and fauces, with inflammation of the throat in most cases; the inflammation terminating by desquamation toward the end of the first week. As the course of this disease is very variable, the symptoms being sometimes very slight, and at others very severe, it has been divided into three forms, *Scarlatina Simplex*, *S. Anginosa*, and *S. Maligna*. All these varieties from the simplest to the most malignant are occasionally met with in different individuals of the same family. I do not look upon the disease as contagious, but rather infectious, the same as Yellow Fever. See page 199.

SYMPTOMS. *Scarlatina simplex* usually commences with the ordinary symptoms of fever, as languor, debility loss of appetite, &c., which are followed with slight chills, pains in the head, back, and limbs, nausea, and often vomiting. These are succeeded by heat and dryness of the skin, thirst, more or less violent headache, sore throat with some difficulty of swallowing, accelerated pulse, frequent and interrupted breathing, the eyes red, and the eyelids swollen. Sometimes the first symptom of this disease is violent vomiting and purging, with pale countenance and great prostration; at others, especially in nervous children, the disease is ushered in with convulsions, or, perhaps, a comatose stupor; again there may be a bleeding from the nose. About the second or third day, the skin is observed to be swollen, the patient frequently complains of a pricking sensation, and a finely dotted eruption appears on the body, of a vivid red color. This eruption usually appears first on the face and upper parts of the body, extending over the whole body in the course of twenty-four hours. About the fourth day the eruption reaches its maximum, a gentle moisture appears on the surface, and the eruption disappears, with, perhaps, a troublesome itching; and a kind of branny scales fall off from the skin.

The fever is generally highest at night, with a remission and paler color of the eruption in the morning; the tongue is fiery red during the progress of the disease, being usually dry and parched; the patient is excessively restless, tossing from side to side, and not unfrequently being slightly delirious; the bowels are frequently loose throughout the disease; and sometimes the eruption is accompanied with small blisters, which, on the termination of the disease, may form ulcers.

Scarlet fever, the same as measles, occasionally presents itself without any eruption on the surface, the disease confining itself to the mucous membrane lining the mouth and throat, and will generally be met with during an epidemic of scarlatina. It frequently assumes a serious character, and is as infectious as any of the other forms. Some writers call this *Scarlatina sine exanthemata*, or scarlet fever without eruption.

Scarlatina Anginosa. Attacking the throat. In this form all the symptoms are much more severe, and are attended with stiffness in the neck, and severe pain in the back of the head. The soreness and inflammation of the throat, is the most marked symptom, and is accompanied with an enlargement of the glands of the throat, and extreme difficulty of swallowing. On inspecting the fauces, they will exhibit a shining redness of a deeper color than in common inflammatory sore throat, and interspersed with pale or ash-colored spots; the breath is very offensive; respiration frequent and irregular; pulse quick and small, or, hard and full; excessive thirst; eyes red; tongue red and dry, with the papillæ enlarged, or, furred yellow or brown; the lips are beset with vesicles filled with an acrid matter which corrodes the skin wherever it comes in contact. The teeth are frequently covered with a dark substance; the inside of the nose becomes dry, red, and inflamed, and a thin acrid matter issues from the nostrils, excoriating the skin wherever applied,

while the obstruction in the nostrils obliges the patient to breathe with his mouth open. The eruption is fuller and more general, presenting one universal redness of the face, body, and limbs, but, sometimes, this symptom is irregular in its appearance and extension. The appearance of the redness does not tend to mitigate the disease. Diarrhea is not uncommon. This form is more irregular in its course, and more fatal than the previous one, frequently cutting off the patient in a few days.

Scarlatina Maligna. Malignant scarlet fever. This form presents the symptoms of scarlatina anginosa at the commencement of the attack, but soon develops a state of prostration of the vital forces. The pulse is small, indistinct, irregular, easily compressed, and so rapid as hardly to be counted; the eyes exhibit a dull redness, and there is an intolerance of light; the cheeks are flushed of a dull red color; deafness is frequently present; and the patient is either delirious or comatose. The tongue, teeth, and lips are covered with a dark incrustation; the breath is exceedingly fetid, and the respiration is rattling and laborious; and swallowing is painful and difficult. Frequently the whole neck assumes a livid color; the throat ulcerates, sloughs, and presents a black appearance; and looseness and vomiting are present. The eruption is faint, appearing in irregular patches; but it soon changes to a dark or purple color, and is frequently mixed with dark petechial spots. Sometimes it appears and disappears at uncertain intervals. Continual coma, extreme difficulty in breathing, profuse diarrhea, numerous petechial spots, followed by death, on the second, third, or fourth day.

Scarlet fever may be *discriminated* from measles, by the eruptions of the former being more of a fiery redness, like a boiled lobster, and diffused over the whole body, and not, as in measles, in distinct spots; it also appears sooner than the latter, occurring on the second or third day, while the eruption of measles is seldom observed until the fourth, is dark-red in color, somewhat the hue of a red raspberry, and a little elevated, so as to impart a feeling of roughness when the finger is passed over it. There is no harsh, obstinate cough, sneezing, weeping or watering of the eyes, and other catarrhal symptoms, as in measles.

Fig. 15.



- a. Epithelium from the bladder.
- b. Epithelial cells of the urethra.
- c. Columnar epithelium, from the fundus of the bladder.

The *prognosis* of scarlet fever depends upon the severity of the attack; when about to terminate favorably, the scarlet color of the eruption, as well as the tumefied condition of the skin, gradually disappear, large brownish scales fall from the skin, which is rendered rough from their presence; the urine has a mucous deposit, seen by the microscope to consist almost entirely of epithelial scales,—and the patient is not safe until this urinary desquamation has ceased, as well as the cutaneous. On the other hand, high febrile symptoms, rapid and small pulse, extreme difficulty of breathing and swallowing, profuse diarrhea, continual coma or delirium, bleedings from the mouth and nose, and large, dark-purple spots appearing among the eruption, are signs of dissolution.

Sometimes, as the skin assumes its natural appearance, the patient becomes dropsical, which proves fatal in a few weeks if not properly treated; at other times, bronchitis, enteritis, ophthalmia, abscesses of the ear, obstinate diarrhea, &c., remain as consequences of the disease. (See Fig's. 15 and 16.)

Fig. 16.



a. Large flattened cells, with a very distinct nucleus and nucleolus, from the trigone of the bladder. *b.* Glandular epithelium from the kidneys. *c.* Epithelium with large and distinct nuclei, from the ureters.

As the poison is apt to remain in the system, in consequence of the obstructed or diminished action of the excretory organs, and particularly that of the skin, it will be necessary, unless otherwise indicated, to attend to the surface of the body from the first. A weak ley water, made by putting some sal soda, or wood ashes into a basin of hot rain-water and used tepid, should be applied over the whole surface of the body and limbs, whenever the febrile symptoms run high; and in some instances, a spirit vapor bath will be found very beneficial, especially when there is a tardiness in the progress of the eruption, or when it has a disposition to "strike in." Warm infusions of Balm, Catnip, &c., warm lemonade, or warm water, acidulated with vinegar, may be drank freely, omitting these measures as the febrile symptoms decline, or when a typhoid condition manifests itself.*

When there are accumulations in the bowels, or a very constipated condition on the first days of the attack, a purgative should be given, as Castor Oil, or the Compound Powder of Jalap; this will tend to relieve pain in the head, remove any existing torpor of liver or digestive organs, and moderate arterial action. Purgatives, however, are seldom indicated, and should not be given when diarrhea is present. Some practitioners prefer as a laxative, the Compound Powder of Rhubarb and Potassa.

To moderate the fever, instead of the above sweating, I am in the habit of prescribing Tincture of Gelsemium one fluidrachm, mixed with six drops of Tincture of Aconite, of which about from six to eight drops may be given to a child six years old in a teaspoonful of water, and repeated every hour until the relaxing symptoms of the Gelsemium come on. In some cases I substitute six or ten drops of Tincture of Belladonna for the Aconite.

I have found the following to form a very valuable remedy in the more

CAUSES. The disease appears to be produced by a specific poison, and almost always appears as an epidemic during cold and changeable seasons. Children are more peculiarly liable to it than adults, and it may occur two or three times in the same person.

TREATMENT. This will vary according to the severity of the attack and the stage at which treatment commences. The very slight attacks which sometimes occur, hardly need other treatment than careful nursing; but in all other cases, I make it an invariable rule to commence the treatment with an emetic, for which purpose the Compound Powder of Lobelia will be found the best article; however, in very young children the Compound Tincture of Lobelia may be given, or the Compound Acetated Tincture of Bloodroot. And this emetic may be repeated daily for three or

four days in succession, according to the severity and general character of the attack; the more dangerous the febrile symptoms appear, the greater will be the benefit derived from the emetic. Not much advantage, however, will be derived from emesis, after the first three or four days.

* It may be proper to remark, that however useful the above mode of producing and maintaining perspiration may be in this disease, it is only occasionally employed by physicians at the present day; but it is well that people who cannot always attain the necessary medicines should be made acquainted with it.

malignant forms of the disease; take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm; dissolve the Quinia in the Elixir, and add to the solution, Saturated Tincture of Black Cohosh root twelve fluidrachms, Tincture of Belladonna two fluidrachms. Of this, the dose to a child six years old is six drops, to an adult twenty drops, which should be given in a teaspoonful of water, and repeated every hour, commencing its use at midnight, and stopping each day at ten or twelve o'clock in the morning. That is, it is to be given during the period of tendency to remission.

The inflammation of the throat, as known by soreness, and difficulty of swallowing, &c., should be attended to at an early period. The Compound Tincture of Camphor may be applied three or four times daily to the throat; or the Compound Liniment of Oil of Amber, or, Compound Liniment of Stillingia may be used instead. Each time after bathing with one of the above liniments, a warm poultice of Hops and Mullein leaves, equal parts, or of mashed Cranberries, stewed, should be placed around the neck and throat. A towel moistened with cold water and applied to the throat, changing it every two or three hours, so as to keep the parts moist and cool, has been highly recommended, and will, no doubt, prove beneficial in many cases.

The following gargle must likewise be used freely through the day; take equal parts, by weight, of Sumach berries and Golden Seal, make a strong infusion, sweeten well with honey, and add as much Borax by weight, as would amount to one-fourth the weight of the plants. A small portion of this, taken into the stomach will not be disadvantageous.

In the sore throat I have found more advantage from lemon-juice than any thing else. The lemon to be cut in two, fill a part with powdered loaf sugar, and let the patient suck the juice and sugar together, and thus keep doing as often as may be necessary. Warm lemonade may also be drank freely.

In the malignant form the following has been recommended; to one gill of boiling water, add four drachms of Cayenne Pepper, and one drachm of Salt, let it simmer for ten or fifteen minutes, and add one gill of Vinegar. After it has stood for about an hour, strain it, and administer a table-spoonful every half-hour or hour, according to the urgency of the case. Or, the mouth and throat may be swabbed with it.

An excellent gargle or wash, which may frequently be used with benefit in the less malignant forms of sore throat, is made of powdered Golden Seal, Cranesbill, and Witch Hazel bark, of each equal parts. To a teaspoonful of this powder, pour on two gills of boiling water, let it stand till cold, and swab or gargle often with it. Black Cohosh root in decoction, has been highly recommended as a gargle in the malignant sore throat. No harm will be done, if a portion of any these gargles are swallowed.

If there is much pain in the head, or a disposition to inflammation of the brain, Mustard plasters must be applied to the soles of the feet, and cooling lotions to the head, as a mixture of vinegar and water, spirits and water, &c., as recommended in fevers.

If putrid symptoms manifest themselves, which they generally do in malignant cases, a table-spoonful of the following, should be given to adults, every hour or two: Take of Sweet Oil, and good Yeast, equal parts, and mix together; for children, the dose should be in proportion to their age. The throat may also be gargled with yeast; or equal parts of milk and yeast may be added together, and sweetened with honey, with which the mouth may be washed or gargled.

If mortification of the mouth or cheek takes place, as sometimes happens

from the use of mercurials, it may be treated as recommended for *Cancrum Oris*.

Frequently, the urinary discharge becomes suppressed, when the patient may be placed in a warm bath for ten or fifteen minutes, after which a fomentation of bitter herbs or pounded Garlic may be placed on the lower part of the bowels, immediately over the bladder; diuretic infusions may also be freely given, as of Goldenrod, Spearmint, Hair-cap moss, &c.

Other symptoms as excessive restlessness, &c., to be treated the same as mentioned under Auxiliary Treatment of Fevers, page 180. When the low, typhoid symptoms are present, treat as named heretofore on pages 181 and 182.

When the ears discharge, a small portion of infusion of Golden Seal may be injected into them three or four times a day; or, if the discharge be offensive, a weak solution of the Chloride of Soda may be used.

The patient may use acidulous drinks freely while the tongue is furred yellow or brown, as diluted acetic acid, prune water, tamarind water, &c. The linen and bedclothes should be frequently changed; the atmosphere of the room impregnated from time to time with the vapor from one of the disinfectants named on page 137; the room must also be kept well ventilated, and the healthy members of the family prevented from entering the apartment of the sick. Belladonna may be used as a preventive to this disease, having been highly recommended by many physicians for that purpose, but my own observations have not fully satisfied me as to its powers of prevention.

In the dropsy that follows scarlet fever, I have, out of over one hundred cases, treated previously according to old school rules, lost but one patient; and that was owing to the fact that the child, being greatly indulged by its parents, was not made to take the means prescribed, because whenever offered him, he began to make a great outcry. The agents I use are as follows: Take of Nitre ten grains, Cream of Tartar twenty grains, infusion of Parsley root twelve fluidounces; dissolve. For a child from five to eight years of age, the dose is a table-spoonful every hour, so that the whole twelve fluidounces is taken up in twenty-four hours. This must be repeated daily until the dropsical swelling has disappeared, and a free urinary discharge produced, which will vary from three to seven days, when its use must be omitted, and some diuretic infusion, as of Parsley root, or Haircap moss, used freely. Should there be a white coat on the tongue, or other symptoms of acidity of the stomach, a table-spoonful of the following may be administered every hour or two, and continued until it is removed: Take Saleratus a teaspoonful, dissolve in a pint of soft water. While the above is being used, should the patient be very weak, his strength may be sustained by wine, or other stimulant, until the dropsy has been removed. As soon as the swelling has disappeared, tonic preparations must be given, as Wine Bitters, &c.; the following will be found an excellent tonic: Take of Gentian root, Colombo root, Calamus, or Sweet Flag root, Golden Seal root, Cayenne pepper, of each in coarse powder, a heaping teaspoonful; add to them one pint of good Lisbon wine, and take, after it has stood a few days, from a teaspoonful to half a wineglassful three or four times a day. It may be sweetened with loaf sugar.

An infusion of Elder bark (*Sambucus Nigra*) and Parsley root, is also recommended to remove dropsical effusions following scarlet fever; or, half an ounce each, of the articles may be steeped in Sherry wine; of which a wineglassful may be taken four or five times a day.

The diet and regimen in convalescence from scarlet fever, must be the

same as recommended in Yellow, Typhus, and Typhoid fevers, which see. Scrofulous affections, enlarged tonsils, and other diseases remaining as a consequence of scarlet fever, must be treated as hereafter named under each affection.

MEASLES, OR RUBEOLA.

SYMPTOMS. An attack of the measles is generally preceded by catarrhal and febrile symptoms, as lassitude and uneasiness, chilliness and shivering, pain in the head, and, sometimes among children, more or less soreness of the throat. These are succeeded by heat, thirst, pains in the head, back, and loins, impaired appetite, furred tongue, and rapid pulse, the same as occur in most fevers ; but the characteristic symptoms are a heaviness and redness of the face and eyes, swelling of the eyelids, a watery discharge from the eyes, and an acuteness of sensation so that they cannot bear the light without pain, together with more or less sneezing, and an acrid watery discharge from the nostrils. Frequently there is inflammation of the fauces, sore throat, hoarseness, and a dry, hard, harassing cough. The febrile symptoms augment rapidly, with hoarseness, difficulty of breathing, a sense of tightness or oppression across the chest, a frequent and dry cough, severe pains in the loins, and nausea or vomiting. There is generally a remission of the symptoms toward morning, with an increased severity of them at night.

The febrile symptoms vary much in severity, sometimes being very mild, and at others being accompanied with great heat, excessive thirst, flightiness or coma, excessive perspiration, looseness of the bowels, the tongue furred white, and great restlessness. In three or four days from the appearance of the catarrhal symptoms, an eruption of small, red, slightly elevated, circular spots may be observed on the surface, very much resembling flea-bites. It appears first on the head, along the edges of the hair, back of the ears, and on the temples, from thence it spreads on the forehead, face, and neck, and subsequently extends over the whole body. As the red spots run together they form small patches, which gradually become larger, and have the form of a crescent. Generally, the eruption is at its maximum in about thirty-six hours ; and on about the fifth or sixth day from its first appearance, the swelling of the skin subsides, and the eruption disappears, first on the head, then on the face, &c., in the same gradation in which it advanced. All the symptoms of fever, cough, &c., gradually pass away with the disappearance of the eruption, and in the places where it manifested itself, there is a desquamation of the skin, or a shedding of minute branny scales. In some instances an annoying itching will remain for a short time.

The above is a description of a mild attack of measles ; but the disease will frequently be found to vary in its symptoms. Thus, the eruption may make its first appearance upon the body, and subsequently upon the face. And, again, it may present itself in a very severe form, or even with considerable malignancy. In such instances, it is apt to leave the patient with a severe cough and inflammation of the bronchial tubes ; or, an exhausting diarrhea ; or, perhaps, a chronic inflammation of the eyes, pneumonia, &c.

Indeed, the sequelæ of measles are often as serious as the disease itself, so that considerable caution is required in the after management. In children disposed to scrofula, this disease is apt to be excited into action, attacking various organs, as scrofulous sore eyes, enlarged glands of the neck,

tubercles of the lungs, &c. Occasionally, a severe dysentery has followed, or, a discharge of pus from the windpipe, &c.

In the more alarming cases of measles, the fever assumes the typhoid type, the pulse becomes feeble, small, and rapid, the eruption recedes and does not appear again, or it manifests itself very irregularly; instead of being red, it becomes pale, or livid, and sometimes nearly black. And with this condition will be observed twitching of the tendons, spasmodic movements of the limbs, and the usual symptoms attending typhoid conditions.

CAUSES. This disease appears as an epidemic, attacking only those whose systems are predisposed to it; and is supposed to be owing to some specific infectious or contagious poison. It may prevail at any period of the year, generally during cold and variable seasons, at which times it proves more fatal. Children are more liable to it than adults, and it is seldom that a person is attacked with it the second time.

Measles may be sometimes confounded with scarlet fever. They may be *distinguished*, however, by the eruption in measles being less vivid than in scarlatina, it is also rougher to the touch, with a tendency to a crescentic form, while in scarlet fever it is more smooth and uniform. In measles there is a watery discharge from the eyes and nose, with sneezing, and intolerance of light; while in scarlet fever these parts remain dry and less sensitive. Cough and difficult breathing are common in measles; the fauces do not exhibit the slough-like masses of mucus, nor the ulcerations which belong to scarlatina, nor does the tongue show the red, elongated papillæ, projecting upward. In scarlet fever the pulse is more rapid, the heat of the body more elevated, and delirium and convulsions are more common. In measles the eruption appears on the third, fourth, or fifth day; while in scarlatina it is observed on the second day, rarely on the third. The shedding of the skin is in small scales in measles, but in good-sized pieces in scarlet fever.

The *prognosis* of measles is favorable in mild cases, when the progress of the disease is regular, when a free and copious expectoration ensues, with a moisture on the skin after the eruption appears, and a gentle diarrhea. When the fever is very high, unusually hard pulse, hurried and difficult breathing, excessive dry cough, severe diarrhea, and coma, or delirium, the prognosis is unfavorable; and much more so, when the eruption recedes, or becomes of a livid color, with petechiæ, small, intermittent pulse, great prostration of strength, twitching of the tendons, &c.

TREATMENT. In the mild cases but little medicine is required; the limbs and body may be bathed with a warm, weak ley water, and the patient may drink freely of a tea made of equal parts of Saffron, Virginia Snake-root, and Spearmint; and some care should be taken that he does not expose himself to cold, or sudden changes of temperature.

When, however, the fever is high, or the eruption does not readily appear, some warm Gin or Whisky toddy may be given with much advantage, and without any fear of increasing the danger of the disease. And in very severe and obstinate cases, the Compound Tincture of Virginia Snakeroot may also be given, in doses according to the patient's age, and which should be aided by the hot toddy, or warm infusion of Virginia Snakeroot, Spearmint, Ginger, or other simple aromatics; not forgetting to bathe the surface of the body frequently with the warm, weak ley, while the febrile stage is present. Infants may be placed in a warm bath, at the same time administering the above tincture, or some warm toddy.

In very obstinate cases where the eruption had receded, or would not appear by the ordinary means, I have invariably succeeded in bringing it out

by applying Mustard poultices over the whole abdomen, to the feet, ankles, and wrists, allowing a considerable degree of redness to be produced. It also proves of utility where there is a severe cough, and drowsiness, with a rapid pulse; likewise, when the eruption has a tendency to become of a dark color. When warm fomentations have been applied over the abdomen, I have in a number of instances witnessed unpleasant results, and feel disposed to condemn their use.

Should the premonitory symptoms of measles be severe, indicating a serious attack, it will be allowable to commence the treatment at an early period with a gentle emetic, as the Compound Tincture of Lobelia for a child, or the Compound Powder of Lobelia for an adult; but in ordinary cases, emetics are not required.

Purgatives are not demanded in this disease; if the bowels are costive, an injection may be given; I have never observed any peculiar, unpleasant effects arising from a constipated condition of the bowels for two or three days in this disease; and always prefer an injection, when it is desired to evacuate them, to physic by mouth, on account of the great susceptibility of the mucous lining membrane of the intestines, which is almost always present.

For the cough which attends, much benefit will be derived from the use of the Compound Tincture of Lobelia, given every hour or two in some Slippery Elm, or Marshmallow infusion, and in a sufficient quantity to produce a slight sensation of nausea. A syrup of Boneset has been found of service in cough; so, also, has an infusion of equal parts of Pleurisy root and Boneset; and in those cases where the febrile symptoms have run very high, with scanty or suppressed urine, the following will prove very advantageous:—Take of Spirits of Nitre, Lemon Juice, Honey, Salad Oil, each, equal parts; mix. The dose for an adult is a teaspoonful every hour or two. When there is great dryness of the mouth and throat, much relief will be afforded by causing the patient to frequently inhale the vapor of vinegar, from a hot brick or shovel.

The eyes, as well as the nostrils, will frequently be relieved, by washing them with distilled Rose-water, with Borax-water, or with an infusion of Slippery Elm.

If the tongue is coated brown or yellow, acidulous draughts may be allowed, as Cream of Tartar water, lemonade, &c. If there is much pain in the head, the feet should be bathed often, and Mustard poultices applied to the feet and back of the neck; and the head may be bathed with some cooling wash, as vinegar, water, and whisky, equal parts of each. Excessive nausea or vomiting may be overcome by an infusion of Spearmint, aided by a Mustard poultice over the region of the stomach.

When there are decided symptoms of pneumonia present, a Mustard poultice should be applied over the whole chest, and after it has produced considerable redness of the parts, a fomentation of Hops and Lobelia leaves should be applied as warm as the patient can bear it, changing it every half hour or hour, and being very careful not to expose the patient while changing them, so as to cause the eruption to recede. Apply warmth and stimulus to the feet and legs, and order the vapor of vinegar to be inhaled frequently. A similar course may be pursued when symptoms of bronchitis are present. When inflammation of the larynx is present, in addition to the above measures, a gentle emetic may be given occasionally, and a warm fomentation of Hops and Mullein placed around the throat, changing it several times a day. Nauseating doses of the Compound Tincture of Lobelia should also be given, as recommended above for cough. I would state here,

that in measles complicated with the above pulmonary inflammations, when the fever is very intense, great heat and dryness of the mouth and fauces, also of the skin, rapid pulse, &c., I have succeeded in overcoming the more formidable symptoms, by the following compound:—Take of Tincture of Gelseminum half a fluidounce, Tincture of Aconite twenty drops; mix, and give to an adult twenty drops for a dose, in a teaspoonful of water, repeating the dose every half-hour or hour. The dose for children must be proportioned to their ages. As soon as the violent symptoms abate, or the peculiar relaxing influences of the Gelseminum occur, omit the medicine, until it is again required.

Diarrhea occurring during the disease, when severe, will be checked by an infusion of Blackberry root, or Dewberry root, to be drank freely; in addition to which, injections of starch-water a table-spoonful, may be given two or three times a day, adding to each injection a few drops of Laudanum.

When malignant or putrid symptoms occur, the system should be supported by wine, stimulants, &c., the same as named heretofore in typhoid conditions of febrile diseases; and for putrescency, Yeast, mixed with Sweet Oil and Molasses, may be given several times a day. In two cases of measles, in which the eruptions became dark-colored, with an accompanying diarrhea and symptoms of a typhoid nature, I effected cures by the internal use of the Tincture of Chloride of Iron.

During measles, the diet must be of the lightest kind, as barley-water, flax-seed infusion, toast-water, baked or roasted ripe fruits, &c. The room should be well ventilated, of a moderate temperature, and kept clean; the patient's covering should be light and comfortable, and changed often. The apartment should be kept quiet and darkened. During convalescence, it is better for the patient to continue a light diet for several days, on account of the continued tendency to intestinal irritation; gruel, panado, currant jelly, buttermilk, whey, &c., may be used in addition to the above, and great care should be taken to guard against the influence of cold, for many days after the desquamation is completed.

The diseases which remain as a consequence of measles, as chronic ophthalmia, diarrhea, &c., must be treated according to the directions given under their appropriate heads.

SMALL-POX.

SMALL-POX, or Variola, is a very loathsome and offensive disease, of a contagious nature, prevailing at all seasons of the year, but usually in the spring and summer, and frequently occurring as an epidemic. All persons are liable to it, but the young more especially. In this country it seemed to follow epidemic Asiatic cholera. It rarely attacks a person the second time, though instances have happened where it has appeared, even, the third time in one person.

SYMPTOMS. Small-pox may be so mild in its character, as to produce hardly any observable symptoms. More generally, however, it commences with a feeling of lassitude, and dull, heavy sensation in the head, which, after a greater or less duration is followed by pains in the head, back, and loins, more or less severe chills, the patient frequently imagining he has caught a severe cold, or he may mistake the first symptoms for influenza, rheumatism, or pleurisy. The chills are succeeded by heat of the skin, severe pain in the head, quick pulse, furred tongue, redness of the eyes, great thirst, tenderness

at the region of the stomach, and not unfrequently nausea and vomiting. As the febrile symptoms increase, especially in the confluent and more unfavorable cases, there will be more or less delirium, or stupor; and children are frequently attacked with convulsions. The fever having continued about two days, and in some instances, three or four, the eruption appears. In my own case the chills occurred at night, and on the following morning, about fourteen hours having passed, the eruption appeared as a small rash all over the body; it was, however, undoubtedly hastened by a Spirit vapor bath which was given me on the morning of its appearance. The eruption at first appears in minute red specks on the face and neck, and gradually extends itself over the body, becoming more and more prominent. In mild cases, there may be found only six or eight of these pimples. Generally, but few will be found on the face. These elevations, from their first formation are surrounded with a redness at their base, and which extends to some distance beyond their margins. There is generally a remission or cessation of the febrile symptoms shortly after the appearance of this eruption.

As the elevation of the pimples proceed, they first present a vesicular character of a white or yellowish white hue, with a dark depressed spot or pit at their center. As the vesicles fill and proceed to maturation, the head and face swell more or less, according to the character of the disease, so as to materially disfigure the patient, which swelling extends over the body wherever the eruption is manifested; the eyelids are more or less closed up so that often the patient cannot see, and in consequence of the mucous membranes becoming affected during this stage, the eyes, nose and mouth are apt to be attacked, in a greater or less degree, with the eruption. There is also a troublesome itching attending this stage, frequently so annoying as to cause the patient to scratch himself severely until blood oozes from the part, which invariably marks the face or whatever part has been scratched. A peculiar, faint, greasy, and sickly odor emanates from the surface of the body during this stage, and which is especially observed when the maturation is at its height. In adults a salivation usually attends this stage, in children a diarrhea is more common.

From the sixth to the eighth day of the eruption, or from the eighth to the twelfth day of the disease, the vesicles have acquired the character of well-developed pustules, convex, without any depression in their center, and gradually change to a brown or dark color. The pustules become converted from a conical elevation to a circular and flattened one, drying up from the center to the circumference, forming scabs which eventually fall off, leaving circular, brownish spots which remain for some weeks, together with permanent scars or pits, more especially on the face. Not unfrequently the pustules burst, and give out a fluid that forms into brown or black crusts, leaving similar appearances and marks, when they drop off, as in the former instance. At this period, when the eruptive process is concluded, and maturation perfected, a secondary fever usually comes on, the severity of which, is owing to the extent of the disease, and the vital energies of the patient; and, it is frequently the case, that a severe and harassing cough takes place about this time. As the pustules dry up and form scabs, the fever abates, and the swelling of the face rapidly disappears.

Small-pox is divided into two forms, the distinct and the confluent. In the distinct variety, the pustules vary in number from a few to an eruption over the whole surface, but they are isolated, distended, circular, and of the size of small peas; the spaces between them are red, and in which an abortive eruption frequently appears, resembling scarlet fever, or erysipelas. The accompanying fever is of an inflammatory character, and ceases when the eruption is complete.

In the confluent kind, vomiting almost always attends, and all the symptoms are more severe and violent; convulsions are more common, delirium is more violent; and stupor more profound; and from the violence of the symptoms during the febrile stage, the patient may die before the eruption is manifest. The pustules run together, do not fill so thoroughly as in the distinct variety, are dark, flaccid, and irregularly circumscribed, and the spaces between them, if any exist, are pale; the secondary fever is of a typhoid character, and the fetor that accompanies the maturing stage toward its termination is very offensive and disgusting. In children diarrhea, and in adults a salivation; and when crusts form, the whole face is covered with a mask composed of the scab.

Sometimes the disease assumes a malignant character, symptoms of putrescency take place at an early period of the disease, livid spots appear, and hemorrhages ensue from various parts of the body.

THE CAUSE of small-pox is not known. The disease generally prevails either endemically or epidemically, and is infectious. There is no doubt in my mind that it depends on causes connected with the condition of the atmosphere. The disease is more readily communicated from one person to another during its season of attack, from the period of the eruption until the desquamation takes place; and a person having a mild attack may communicate a severe form of disease, and vice versa, depending on the state of the constitution receiving the infection.

PROGNOSIS. The distinct small-pox is considered as being attended with the least danger, except when the eruptive fever is very violent, when it attacks pregnant women, or when it approaches nearly in its nature to that of the confluent. But the confluent small-pox is always accompanied with a considerable risk, the degree of which is in proportion to the violence and permanence of the fever, the number of pustules on the face, and the disposition to putrescency which prevails. When the disease proves fatal, death commonly occurs between the eighth and eleventh day; but in some cases death is protracted to the fourteenth or sixteenth.

The confluent species, when not fatal, is apt to induce various morbid affections, as diseases of the eye, chest, scrofula, &c. Frequently, however, it will leave persons previously unhealthy, in the possession of perfect health.

If the hands and feet swell regularly, while the swelling of the face subsides at the same time, it is favorable; while delirium, violent fever, stupor, severe vomiting, sudden disappearance of the eruption or subsidence of the swelling of the face or extremities, suppression of saliva, depression of pustules, with loss of strength, pallor of the skin, great anxiety, fainting or convulsions, denote the greatest danger. If the patient does not appear to be heart-sick, keeps in good spirits, is talkative &c., after the maturing period is completed, it is in all cases a favorable indication. Infants seldom recover from small-pox.

VARIOLOID is only a modified small-pox, and requires a treatment similar to it, in all respects, according to the grade of its symptoms. I do not consider an attack of varioloid, by any means a preventive of small-pox. The eruption of varioloid does not assume the flattened pustular form, but is more spherical, and is filled with yellow serum or pus. After a few days, the vesicles or pustules dry up and form small round scabs, which fall off and leave no indentation after them.

TREATMENT. The great difficulty in the management of small-pox, is that of doing too much, and the friends are apt to suppose that if the practitioner is not constantly prescribing medicine, he is not doing justice to the patient. But this is a wrong opinion, for, under ordinary circumstances,

small-pox requires but little medicinal treatment. When the symptoms are mild, let the patient alone, any interference with the natural progress of the disease may induce a fatal result. It is only when the symptoms are very severe, or when certain troublesome symptoms appear, that medicines are to be employed. And I have no doubt but that the great fatality in former times, was more owing to the measures of the physician than to the disease.

In nearly all cases of small-pox, excepting the very mild forms, an emetic administered early in the disease, will prove very beneficial, often lessening its subsequent severity and danger, and checking the nausea or vomiting which may be present; and for this purpose the Compound Powder of Lobelia may be administered to an adult, or the Compound Tincture of Lobelia to a young child.

After the operation of the emetic, should the febrile symptoms run high, or if the patient has previously been costive, or, if there are evident vitiated accumulations in the bowels, the bowels should be opened by an injection, and the internal administration of a Seidlitz powder. No active purgation must be produced; it is much better to repeat the Seidlitz powder in the course of five or six hours, than to give a harsh cathartic agent.

Should there be great irritability of the stomach, with nausea, or constant vomiting, an infusion of equal parts of Marshmallow root and Peach leaves, may be given, and a Mustard poultice be applied over the region of the stomach. Mustard applied along the whole length of the spinal column, will frequently relieve the great pain in the head, back, and loins, as well as aid in allaying irritability of the stomach.

The body should be frequently bathed with warm weak ley water, and which should be continued daily until the appearance of the eruption.

When the primary or secondary febrile symptoms are very active, I usually administer about twenty drops of the Tincture of Black Cohosh, every two or three hours; and when very intense or inflammatory, I add two or three drops of the Tincture of Aconite to each dose. This is all the medicine which I ever give in this disease, save when there is excessive restlessness and wakefulness, in which case eight or ten grains of the Compound Powder of Ipecacuanha and Opium may be administered at bedtime, and repeated in an hour or two, if necessary.

When there is excessive pain in the head, or delirium, the feet may be bathed in warm water for fifteen or twenty minutes, after which apply Mustard poultices to them. If these symptoms are very severe, the Mustard may also be applied to the back of the neck, and along the whole course of the spinal column, and allowed to remain until a redness of the skin is produced, when, if necessary, its situation must be changed. The head and temples must also be bathed with some cooling lotion, as a mixture of spirits, vinegar, rain-water, one gill of each, salt a teaspoonful. This may be used tepid or cold, as appears to be best suited to the case. In case of soreness of the mouth, or throat, these may be washed or gargled with a decoction of Sage and Hyssop, to which powdered Borax may be added, and the whole sweetened with honey.

When there appears to be a flabbiness of the pustules, or they do not fill well, wine whey, or milk punch may be given freely until an improvement has taken place in their appearance; and should they recede or strike in, in addition to the above, a teaspoonful of the Compound Tincture of Virginia Snakeroot must be given in a teacupful of Balm tea; but be careful not to apply warm poultices or fomentations to the bowels or stomach at this period,—I have seen them invariably followed with rapidly fatal results. These conditions are apt to be attended with great prostration of strength, requiring wine, ale, &c., with some Peruvian bark.

If putrid or malignant symptoms appear, give a table-spoonful of a mixture of equal parts of Yeast and Sweet Oil, and repeat it every hour or two. Where Yeast cannot be obtained, small doses of dilute Pyroligneous Acid may be substituted. Other symptoms to be treated as named in the previous febrile diseases.

The room in which the patient lies should be kept moderately cool, should be well-ventilated every day, and be frequently filled with one of the disinfectant vapors named on page 137. He should be kept not too warmly covered, and his clothing as well as the bedlinen should be changed every day or two. If he desires water to drink let him have it; and always allow acids when the tongue is coated yellow, brown, or black. The diet should be barley-water, thin Indian meal gruel, buttermilk, apple-water, roasted apples, lemonade, currant jelly, guava jelly, sour orange juice, &c. I have known patients to use the juice of sour oranges for a number of days in succession, and with much advantage. To prevent the eyes from becoming injured by the disease, they should be frequently washed with Rose-water, or mucilage of Slippery Elm, more especially when the fluid from the pustules flows into them. And the nostrils may be kept free by passing a well-oiled camel's hair pencil into them several times a day.

To *prevent pitting* resulting from small-pox, I have for the last fifteen years pursued the following course, by which all who were attentive to the directions have been cured without a single pit. The body in small pox is seldom pitted, because it is kept from the light, and the action of the atmosphere upon the pustules is greatly modified; we must then protect the patient's face from the action of both the light and the air.

To accomplish this the room in which the patient lies must be kept constantly dark, but not so closed as to prevent a free circulation of fresh air for inhalation, and the face must be kept *constantly well-oiled* with Sweet Oil, which must be put on by *gently touching*, (not rubbing) the face with a soft feather which has been dipped in the oil. Sweet Oil or Almond Oil will answer. The oil must by no means be allowed to dry on the face. The patient must not touch his face with his hands at all, and should he be delirious, the hands must be secured; neither must the face be rubbed against the pillow or bed-coverings.

The room must be kept dark, using a lamp or candle only, when a light is required, and the oil must be applied from the commencement of the appearance of the pustules until they have all scaled off. At the same time a piece of black oil-silk, well-oiled, and having an aperture cut in it for the mouth and nose, to enable the patient to breathe, must be kept upon the face, removing it only to oil the face.

COW-POX, OR, VACCINE DISEASE.

THE Cow-pox is an artificial disease, introduced by Dr. Jenner in 1798, for the prevention of small pox, protecting the system from its infection; and mankind are deeply indebted to him for having conceived the happy thought of employing it. The vaccine virus is taken from the cow, which, when laboring under the disease, manifests symptoms of considerable sickness, with a vesicular eruption on their udders. And, it had been observed by Jenner, that those who milked them at this time were liable to an ulcer with some degree of fever, and subsequently were apparently safe from the infection of small-pox.

Vaccination with the virus from the cow is in most cases a protection

against small-pox, or, at all events, it greatly modifies its severity. And when small-pox appears after vaccination, the presumption is, that the vaccine matter was not good or genuine. As the virus of cow-pox does not seem to lose its influence by passing through the human system, it is more commonly collected for use from individuals. The following rules must be observed in obtaining it:—

1. It is better to procure the matter from a child of from two to six months old, who has been vaccinated, and who is *perfectly healthy*.

2. The matter should be taken while the fluid is perfectly transparent, and not later than the eighth day.

3. The matter, if not used immediately, should be collected on small pieces of quill, and allowed to dry gradually and thoroughly, after which it should be kept in a well-closed vial and in a cool place. A recent and very excellent plan is, to preserve the matter in a concavity made in a small square or round slip of glass, and cover this with a plain slip of glass; the surfaces designed to come in contact with each other being ground.

In vaccinating or inserting the matter, the upper and front part of the left arm is usually selected; a very superficial scratch or puncture must be made, and the matter, moistened by a drop of water, rubbed thoroughly into the puncture. If the part bleed a few drops, the vaccination will not be likely to "take."

Some practitioners instead of collecting the vaccine fluid on the eighth or ninth day, prefer waiting until the fourteenth or fifteenth day, and obtain the dried scab, a portion of which is dissolved in a little water, from time to time, and used as required. It is equally as good as the fluid; and should be preserved in a similar manner.

The best age for vaccinating is from two to six months, though it may be safely and effectually done at any subsequent period, and the most appropriate time is cold weather, though, when needed, it may be performed at any season of the year. In cold weather it is less troublesome. It is proper to repeat the operation two or three times, should it prove unsuccessful, and in seasons of small-pox, there is no harm in repeating it carefully a dozen times. It is generally considered, that a person who is not susceptible to the vaccine disease, is equally unsuspceptible to small-pox. It is believed by some that the vaccine virus affords protection for only a limited number of years, and that it should be repeated after six or eight years; that its influence in this respect, differs with various individuals there can be no doubt, but these individuals who are the exceptions, are fortunately nearly as few as those who may have a second attack of small-pox. Among persons who have been vaccinated, it will be well, however, to have the operation repeated whenever small-pox prevails, as no harm can thereby ensue. The operation is simple, and soon accomplished, the disease not usually troublesome or severe, and the results will test the susceptibility of the system to the small-pox influence.

Soon after the insertion of the matter, a slight redness is seen, which soon disappears, leaving only the mark of the incision or puncture. On the third or fourth day, a little red speck, slightly raised, appears, which on the fourth or fifth day becomes a vesicle, somewhat flattened on the top, and contains a clear, transparent lymph. By the seventh or eighth day, the vesicle is well-developed, with a regular, round, well-defined margin, a depression at its center, and having its base surrounded with a circular redness or inflammation. The vesicle continues to enlarge gradually, until the tenth or eleventh day, when it assumes a pearl color, is perfectly circular, well elevated and from three to six lines* in diameter, and with a circular

* A line is the twelfth of an inch.

redness around its base about two inches in diameter. The redness and hardness now begin to diminish, the vesicle contains a viscid, dark-colored fluid, a dark-brownish scab forms, and, on the fourteenth or fifteenth day, falls off, when it may be used for vaccination, if the matter has not been previously evacuated for this purpose. The scar left after the part has healed is circular, more or less indented, with a well-defined border, and having on its base or bottom a number of minute pits or depressions.

Treatment is seldom required during the course of the vaccine disease. Some persons experience constitutional symptoms, with more or less fever, swelling of the axillary glands, &c.; such require quiet, moderate diet, and regularity of bowels. As during the development of the vesicle, there may be a burning or itching sensation, great care should be taken with children that they do not interrupt its progress by scratching or rubbing it off.

CHICKEN-POX, OR VARICELLA.

CHICKEN-Pox, sometimes called swine-pox, is an eruptive disease, somewhat similar to small-pox; it appears to depend upon a specific contagion, attacks a person but once during life, but is not a protective against small-pox.

SYMPTOMS. Frequently the eruption appears without any premonitory symptoms. In most cases, however, there is a slight febrile action, as slight chilliness, flashes of heat, more or less pain in the head, thirst, restlessness, and a quick pulse. These febrile symptoms may continue from a few hours to two days, when a slight eruption appears on the breast, back, and shoulders, gradually extending itself to the face, head, and extremities. This eruption is at first in the form of bright red spots, somewhat resembling those of small-pox, and is often attended with an incessant tingling and itching, occasioning the patient to scratch and rub off the tops of the vesicles during their progress to maturity. In two or three days these spots become converted into transparent vesicles, covered with a very thin skin, and containing a clear fluid. About the fifth day, these vesicles having matured, gradually dry away, and on the ninth or tenth day the scabs fall off, and leave no permanent scar or pit, unless the eruption has been improperly interfered with by scratching.

This disease may be mistaken for small-pox, but may be *distinguished* from it, by the slight febrile symptoms and their short duration in chicken-pox, by the earlier appearance of the vesicles, and by their never acquiring the purulent, dark-yellow, or mahogany color of the small-pox pustules. The vesicles on being punctured are diminished in size, which is not the case with those of small-pox; beside which they are very few in number, and seldom have a pit or depression in their center.

TREATMENT. Treatment is seldom required in this disease, further than to keep the patient comfortable, and free from any exposure that may occasion a cold. Should, however, the febrile symptoms be of unusual character, the bowels may be opened by Seidlitz powders; warm drinks of simple herbs administered; and the patient kept upon a mild, unstimulating diet.

MILIARY FEVER.

THIS disease was formerly more common than at present, and principally among parturient females, appearing in from two to twelve days after delivery. Those of debilitated constitutions are more subject to it, and among its causes are enumerated impure, over-heated air, stimulants, rich food, fatigue, uncleanness, excessive discharges, &c.

SYMPTOMS. Miliary fever is ushered in with chills, followed by ordinary febrile symptoms, and an acid perspiration, of a penetrating odor somewhat like that of rotten straw. There is a suppression or diminution of the secretion of milk, as well as of the lochial discharge. The skin becomes rough, with a pricking or itching sensation, and sometimes aphthous ulcerations of the mouth and throat take place. In a few days, minute round vesicles, about the size of millet seeds, appear upon the neck, breast, and back, and also on the forehead, and gradually manifest themselves over the whole body and limbs. These vesicles are usually distinct, have a rash or slight inflammation around their base, and seldom appear on the face. In about thirty hours the vesicles assume a white or pearly appearance, and, after a few days dry up, leaving scabs or branny scales which fall off. The tongue is coated white, with red edges, and prominent papillæ. As long as the fever and sweating continue, the patient is liable to frequent attacks of the eruption.

TREATMENT. The room should be well cooled and ventilated, and only light bedclothing allowed, being careful not to reduce the temperature so as to permit the patient to "catch cold." Regulate the bowels by mild laxatives, and administer an infusion made of equal parts of Maidenhair and Elder blows. All the drinks should be cool. If the stomach and biliary organs are much deranged, a mild emetic may be given at the commencement of the attack. The drinks should be cool.

When the disease is severe, Sulphate of Quinia may be given in doses of a grain three or four times a day. Ulcerations of the mouth may be bathed or gargled with Borax, dissolved in water, to which some Honey is added; or the infusion of Golden Seal and Blue Cohosh, named under Thrush, may be employed. The chief point is to prevent a recession of the eruption, or a sudden checking of the perspiration, either of which would be apt to cause a fatal termination. The diet should be light, bland, and nutritious; and the perspiration must not be increased too much lest great debility be induced.

INFLAMMATORY DISEASES.

INFLAMMATORY diseases are characterized by increased redness in the part affected, heat, pain, general swelling, and more or less secondary constitutional symptoms. It is termed *general*, when the whole system is affected; and *local* when only one part of the system is involved. When an internal organ is affected it is called an *internal* inflammation, and when it is confined to a part near the surface, it is called *external*. When the symptoms are very severe, with heat, pain, redness, quick pulse, &c., the inflammation is *acute*; when of long standing, or when the more active symptoms have subsided, it is *chronic*. Writers have also divided inflammations into the *phlegmonous*, and the *erysipelatous*. *Phlegmonous* inflammation is the term applied to ordinary inflammation occurring in all parts of the body, in which there is a circumscribed inflammatory affection of

the skin and cellular membrane, with more or less swelling, of a bright red color, and in which any effusion that happens to take place is usually converted into pus. *Erysipelatous* inflammation is confined to the skin, or internal mucous membranes, with more or less redness, which disappears transitorily upon pressure, and which is not distinctly circumscribed, but is gradually shaded into the color of the surrounding tissues, and which is attended with heat and a burning pain; there is but little swelling, but more frequently vesications of various sizes arise, followed by desquamation of the cuticle. When phlegmonous and erysipelatous inflammation occur in combination, it constitutes what is termed *erysipelas phlegmonodes*.

ERYSIPELAS.

ERYSIPELAS or St. Anthony's Fire, is a spreading inflammation, characterized by a circumscribed redness of the skin, accompanied by a sensation of heat and itching, and more or less constitutional derangement, with vesication or swelling of the subcutaneous cellular tissue, commonly ending in resolution and desquamation, sometimes in suppuration, and rarely in gangrene. Every part of the body is liable to erysipelatous inflammation, but it more frequently appears on the face, legs, and feet, when seated externally. It appears to be confined to no particular age, sex, or constitution; persons about the middle period of life are not so liable to it as those younger or older. Females are more subject to it than males; especially those of sanguine and irritable habits, or who are intemperate.

SYMPTOMS. Erysipelas generally commences with chills, loss of appetite, nausea, costiveness, and other common symptoms of fever, succeeded, in from two to four days, by an inflammation of some parts of the body, attended with great pain, heat, itching, or a pricking sensation, a remarkable florid redness and swelling of the skin, which redness is characterized by disappearing and leaving a white spot for a short time, after being slightly touched by the end of the finger; and if the disease is extensive, all the symptoms of typhoid fever ensue. The part most commonly affected is the head, when it commences with stupor, some degree of delirium, and a full and frequent pulse, and when the inflammation is extensive, there is generally no remission of febrile symptoms. The face swells and presents a red appearance—the eyes being often closed up with the swelling; breathing is difficult; the fauces and nose are very dry; and if the disease is violent, the patient generally dies on the ninth or eleventh day of its attack, from inflammation, or other affection of the brain.

When the disease affects the breasts, they swell and become very hard and painful—often suppurating,—there is also, in many instances, a severe pain in the glands of the armpits, in which abscesses will sometimes form. When the feet are affected, the contiguous parts present a shining appearance, attended with pain, scarcely bearing the slightest touch, and often ascending into the legs. In mild cases there will be heat, roughness, and redness of the skin, with slight febrile symptoms, which after a few days will cease, the surface of the part affected becoming yellow, and the cuticle or scarf-skin falling off in scales.

When the attack is severe, with high inflammatory symptoms, there will be pains in the head and back, great heat, thirst, restlessness, the pulse will become small and frequent, and after a longer or shorter time, small vesicles, similar to those produced by blisters, present themselves, sometimes having more the appearance of a small-pox vesicle, which are filled with a watery

fluid at first containing a free acid, and of a colorless, but more commonly, yellowish cast, which becomes more opaque and thicker—the cuticle breaks and falls off in scales, leaving the skin either sound, or ulcerated; and when this last is the case, the ulcers are frequently of a disagreeable, ill-conditioned, and indolent character, sometimes, but rarely, assuming a tendency to gangrene.

CAUSES. Erysipelas may be considered a humoral and constitutional inflammatory disease, proceeding from a vitiated state of the blood; and whether it be epidemic, or sporadic, this peculiar condition of the blood must be present. When it occurs as an epidemic, it is connected with some particular state of the atmosphere. The condition of the blood necessary to dispose to this disease, is undoubtedly produced by intemperance in eating or drinking, or by using improper diet. And it will be found that persons accustomed to a free indulgence in all kinds of food and drink, will develop the disposition to erysipelas, either in their own persons, or in that of their offspring, and frequently in both.

The various causes which have been named as producing causes, have, as far as my observation has led me to believe, merely called into action morbid humors previously produced by unhealthy food, or intemperance in eating and drinking. And it may have been observed, that a meal, whether composed of improper, or of healthy food eaten in excess, is most commonly followed, in erysipelatous habits, by a severe attack of the disease; while, on the other hand, a strict attention to diet will lessen the severity of the disease, and often entirely prevent its reappearance.

Although erysipelas is observed as comparatively confining itself to the true skin, I feel fully convinced that it very frequently attacks internal organs, causing sudden and unexpected loss of life; and this may be the result of its recession from the surface; or, it may primarily attack an internal organ, as in child-bed fever. A disease, known as *black-tongue*, is probably a malignant form of erysipelas occurring without an eruption.

The *prognosis* in ordinary cases of erysipelas is favorable. But, when the symptoms are severe, with delirium or coma, and typhoid symptoms; when it occurs in the aged, the intemperate, or those of debilitated constitutions; and when it recedes or “strikes in,” the prognosis is unfavorable. When connected with phlegmonous inflammation, or complicated with other diseases, or occurring as the sequel of dropsy, it is always unfavorable. It frequently occurs in new-born infants, and is apt to prove fatal.

TREATMENT. I invariably commence the treatment of all erysipelatous attacks accompanied with febrile symptoms, with a purgative, and for which, I prefer the following powder:—Take of Podophyllin one grain, Leptandrin four grains, Cream of Tartar twenty grains; mix, and divide into two powders. One of these powders may be given every six hours, until free catharsis is produced. It is necessary to keep the bowels in a regular condition daily, during the progress of the disease, and for which the same measures may be pursued as recommended for a similar purpose in Typhus Fever, page 206. Some authors recommend an emetic at the commencement of the attack, but I have not used it, except in those cases where the symptoms were very severe.

After the action of the cathartic, the following must be given in those cases attended with high inflammatory symptoms:—Take of Tincture of Chloride of Iron one fluidrachm, Sweet Spirits of Nitre two fluidrachms; mix. The dose is thirty drops every hour or two, in a wineglass of a diuretic infusion made by infusing one ounce, each, of Elder flowers and Maiden hair, in two pints of boiling water. If these articles cannot be readily obtained, some

other diuretic infusion may be substituted, as of Marshmallow, Cleavers, Haircap moss, &c. Diuretics will be found of much utility in those cases attended with a difficulty in urination, high color, and heat of urine, &c.

When the disease occurs as an epidemic, the above preparation may be omitted, and the following substituted; and which will be found to exert a decided influence on the disease:—Take of Sulphate of Quinia, Prussiate of Iron, each, twelve grains; mix, and divide into four powders, of which three may be given a day, and continued, until the disease yields.

Should there be a tendency to a recession of the eruption, a determination to the surface must be kept up by the administration of diaphoretics; either of the following may be used for this purpose:—Take of Bloodroot, Pleurisy root, Ipecacuanha, Nitre, each, in powder, one drachm; mix; the dose is ten or fifteen grains every three or four hours. Or, take of Ipecacuanha, Crawley root, Pleurisy root, Nitre, each, in powder, one drachm; mix; the dose, same as above. When there is much restlessness, an infusion of Ladies' Slipper and Scullcap may be given; or a pill composed of equal parts of Cypripedin and Scutellarine; or, a pill composed of equal parts of Extract of Hyoscyamus and Lupulin.

As a local application to allay the burning and itching of the parts, I have found more benefit to attend the use of the following, than any thing else:—Take of Tincture of Lobelia, Tincture of Bayberry bark, Saturated Solution of Muriate of Ammonia, each, a fluidounce; mix. Bathe the affected parts with this several times a day; and in cases of great heat and burning, moisten a piece of linen with it, and keep it constantly upon the parts. If these articles cannot be obtained, burnt or scorched flour, or a Slippery Elm poultice may be used instead. In some cases I have found the following mixture advantageous:—Take of Tincture of Poison Hemlock, (*Conium Mac.*) one fluidounce, Distilled water one fluidounce, Muriate of Ammonia two drachms. Dissolve the Ammonia in the water, and add the Tincture. To be used the same as the first-named application above.

Dr. Fahnestock, of Pittsburgh, recommends, both in simple and phlegmonous erysipelas, to pencil the diseased surface with pure Creosote, extending it to some distance beyond the inflamed part. In phlegmonous erysipelas, repeated applications are required, but in no case is the skin permanently marked. A brisk cathartic, as of Podophyllin and Leptandrin, may be given at the same time. If the Creosote is pure, it causes an immediate whiteness of the skin to which it is applied. In some cases, I have relaxed the skin with hot water, or its vapor, and after each fomentation saturated the inflamed surface with Lard one ounce, Oil of Lobelia half a drachm, Tincture of Muriate of Iron half a fluidounce; mix. After its application, cover the surface with wool.

When the disease attacks the face with pain, heat, swelling, more or less delirium, and a tendency to lividity of the eruption, the whole face and head should be exposed, several times a day, to the following vapor bath, taking care to cover the head that the vapor may not escape; take Catnip, Wormwood, Tansy, and Boneset, of each equal parts, boil in water, and allow the vapor to act on the face for ten or fifteen minutes at a time. Should symptoms of putrescency appear, Yeast and tonics may be given internally and the Chloride of Lime sprinkled over the parts, which will frequently arrest the putrefactive, or gangrenous action. A Saturated Solution of Sulphate of Zinc, will also be found useful in mortification; it may be applied to the parts, and when they are whitened, an Elm poultice must be placed over them, and continued, changing twice a day, until the white eschar sloughs off. As a tonic, the best that I have found in this disease is

composed of Red Peruvian bark two ounces, Camomile flowers one ounce, Port wine a pint. This preparation may be administered three or four times a day, in wineglassful (or half full) doses.

When ulcerations follow the scaling of the skin, they are commonly of an indolent nature; to remove which, promote suppuration, and thus facilitate their cure, the parts, if practicable, should be steamed every twenty-four hours over an infusion of bitter herbs, after which a very small quantity of Spirits of Turpentine, not to exceed one drop, should be placed upon the center of each ulcer by means of a camel's hair pencil, not allowing any to get on the edges of the sore, or on the surrounding skin; over which apply Indigo weed Ointment, spread on linen, bandage tightly, and keep excluded from the air, and enjoin rest until the next dressing. The Spirits of Turpentine will often occasion considerable pain for a few minutes, but in every case it changes the character of the ulcer to that of a healthy one. It should be applied but once in twenty-four hours—omitted when the sore presents a proper aspect, and re-applied as soon as it assumes the indolent form. As the fever is generally off in such cases, tonics, and mild laxatives may be given. In cleansing the ulcers, they should never be rubbed, but pressed lightly with a soft piece of sponge.

The diet during the inflammatory symptoms should be light, as barley-water, panado, sago, &c.; but where there is much debility, and symptoms of irritation, animal broths, and a moderate use of wine, may be allowed. Some persons are subject to frequent attacks of erysipelas, occurring with little or no constitutional derangement; and for such the following means will be found to effect a cure:—Take of Ground Centaury four ounces, Beech drops two ounces, Burdock seed two ounces; pour on these articles, coarsely bruised, four pints of boiling water, cover them, and when cold add two pints of good Whisky; let the whole stand a few days, frequently agitating. The dose is a wineglassful three times a day. The bowels should be kept regular, procuring one, but not over two evacuations daily; and for which purpose, if necessary, the Compound Powder of Rhubarb and Potassa may be taken in doses of from five to ten grains, and repeated three times daily. This will be found of service in eradicating both the simple and phlegmonous forms of erysipelas; but in all cases, whether erysipelas be in an active or passive condition, if we place all our dependence on medicine, we will be subject to the mortification of witnessing frequent returns of the attack, or its apparent intractability to the most active and efficient articles of the *Materia Medica*; diet is, therefore, an all-important measure in the treatment, as well as proper remedies, it should be light, nutritious, easy of digestion, not fat or greasy, anti-acid, &c. Sweets—as preserves, candies, &c., raw fruits and vegetables, fish, veal broths, lemonade, or other causes of acidity, should not be used. Milk, although it has been advised, is an improper article in all erysipelatous cases, owing to the existing disposition of the stomach to acidity.

INFLAMMATION OF THE BRAIN.

INFLAMMATION of the Brain, or Phrenitis, is known in some sections of country, by the improper name of “brain fever.” Among medical men it is variously termed, *meningitis*, *encephalitis*, *arachnitis*, &c., according to the several parts affected. The term *phrenitis* may include any, or all of these, the treatment being very similar in each variety.

SYMPTOMS. An attack of this disease may take place either gradually,

or very suddenly, more commonly the former. The premonitory symptoms are, at first, depression of spirits, impaired appetite, mental uneasiness, and confusion of ideas, especially when in the recumbent posture, debility, and sometimes ringing in the ears, and even blindness. These are succeeded in most instances by a more or less severe chill, and constant headache, which are soon followed by violent fever, hot and dry skin, flushed countenance, suffused eyes, or a haggard, anxious, fearful expression of them, the pulse is quick and hard, and the pulsation of the carotid arteries, in the neck, is rapid and forcible. The intensity of the headache increases, as also the ringing in the ears, sometimes changing to a humming or rumbling sound; the senses become morbidly acute, as known by the sensitiveness and restlessness manifested on exposure to either light or sound. The pupils of the eyes are constantly contracted; the patient is extremely restless and wakeful, with more or less delirium; he frequently imagines that some one designs to injure him, and cannot bear restraint or contradiction, and the delirium is often of a furious raving nature. The head is remarkably hot, while the extremities are cold; the tongue is furred white, red at its edges, dry, pointed, and the papillæ elevated; the bowels are obstinately constipated, and nausea or vomiting are common. Respiration is accelerated and laborious, seldom hurried as in fevers, but irregular and with frequent sighs. Generally there will be spasmodic movements of the muscles and of the tendons. The urine is scanty and deep colored.

As the disease advances, a change occurs in the symptoms, the previous delirium is succeeded by a stupor which gradually passes into coma; the formerly contracted pupils are now dilated, and there is less sensibility to light; the eye loses its brightness, sometimes there is squinting, and the countenance is vacant or idiotic; picking at the bedclothes, or grasping in the air, are almost always present. The hearing is much diminished, and indeed, all the senses are more or less blunted; the limbs become perfectly relaxed; the pulse is slow, sluggish, and irregular or intermittent; the respiration is deep, slow, and often stertorous; the urine is very scanty, if passed at all, and the feces are involuntarily discharged. Convulsions, or paralytic attacks, frequently ensue.

Finally, the pulse becomes hurried, small, and unequal, the countenance pale and sunken, the skin has a cold and clammy perspiration upon it, the urine passes involuntarily, the coma becomes more profound, and death terminates the scene. It must be remembered, that these symptoms vary, being very mild with some, and extremely violent with others, depending upon the degree of vital energy of the system, the severity of the cause, and other attending circumstances.

Some care is required in discriminating inflammation of the brain from fever; the headache of phrenitis is more constant than that of fever, and appears to be confined to no particular spot; the sleep in phrenitis is disturbed with bad dreams, and sudden startings, or awaking in fear, and, with children, a scream on awakening. In typhus, the urine is scanty, acid in the earlier part of the disease, with increased uric acid, and diminished urea. In phrenitis, there is an excess of the phosphates.

CAUSES. Inflammation of the brain may be produced by falls, blows, or other injuries inflicted upon the head; long-continued and intense study; cold; fatigue; intemperance in eating and drinking; long-continued exposure to the heat of the sun; violent exercise; suppression of habitual evacuations; excessive anger; and whatever causes a determination of blood to the head. It frequently occurs as a secondary attack, by the recession or metastasis of some disease, as erysipelas, rheumatism, cholera-infantum, cutaneous affections, &c.

The *prognosis* is generally doubtful. Much depends upon the cause of the attack; if it be produced accidentally by blows, &c., it is more favorable than where it is owing to some constitutional difficulty. The milder the symptoms, the more favorable are the indications; but we should not despair even of the worst cases.

TREATMENT. Inflammation of the brain requires the most prompt and energetic measures; the principal indication being to equalize the circulation, by determining the blood from the brain. In the early part of the disease, when there are accumulations in the stomach, an emetic, as the Compound Powder of Lobelia, may be given; but more generally, the better agent will be an active cathartic, which not only unloads the bowels, but by its derivative influence, causes a determination from the brain. The most useful cathartic is the Compound Powder of Jalap, one drachm of which may be administered with about ten grains of Cream of Tartar. And this cathartic must be administered every day, for some days, or until the inflammatory symptoms have subsided. But when there is great constitutional debility connected with the disease, it will be improper to administer cathartics, and, in such cases, the bowels must be opened by injections, and mild aperients, as infusion of Blackroot, Rhubarb, &c.

As soon as possible, in the early stage of the disease, the feet should be bathed in warm weak ley water, which may be repeated twice a day; and if the strength and condition of the patient will admit, a Spirit vapor bath should be given without delay, which will tend materially to lessen the severity of the attack. On placing the patient in bed, after these operations, Mustard poultices should be applied to the feet, and along the whole course of the spinal column, and kept on until considerable redness is produced. And this course may be followed daily, as long as the headache and inflammatory symptoms are present.

Ligatures to the thighs, for the purpose of diminishing the flow of blood to the brain, will be found of decided advantage in severe cases; but this should always be done by a physician, lest the ligatures be applied so tightly as to interfere with the arterial circulation, or else not tight enough. See article Hemastasis in part III.

Local applications should also be made to the head to relieve the pain and delirium; warm water may be frequently applied to the head, and then evaporated by fanning; or, a fomentation of equal parts of Hops and Stramonium Leaves, infused in hot water, may be enclosed in a muslin bag and applied to the head; it should be changed from time to time, not allowing it to become cold.

In cases where the headache is very intense, or the delirium violent and raving, and the above measures do not lessen the symptoms, it may become necessary to apply cups to the temples and nape of the neck, and repeat the application two or three times a day, until the symptoms are relieved. Though I have had no occasion to adopt this measure as a mode of relief, for the last sixteen years, the other means having in my hands, succeeded admirably.

When there is great restlessness, or want of sleep, five or ten grains of the Compound Powder of Ipecacuanha and Opium may be given every two, three, or four hours; or, a teaspoonful of the Compound Tincture of Virginia Snakeroot in some infusion of Scullcap, may be given every night.

The patient must be kept cool, in a dark room, free from noise or other disturbance, with his head considerably elevated, and no food should be allowed him, except toast-water, thin barley-water, cold water, lemonade,

orange juice, &c., given in small quantities merely to quench his thirst. He should be closely watched, lest he get out of bed, and do some injury while in his delirium.

In the stage of coma, when there is no paralysis, no squinting, and the patient can be aroused to consciousness, stimulants, nourishment, and tonics may be tried. Carbonate of Ammonia may be given, in conjunction with a small quantity of Ale or Porter, to which Camphor one-fourth of a grain, and Sulphate of Quinia one-half of a grain, have been added. This may be repeated as often as required.

When phrenitis occurs as a consequence of some suppressed evacuation, or a recession of some eruption, these must always be restored as promptly as possible.

During convalescence, great care should be taken to avoid a relapse; the same course must be pursued as named under convalescence from fevers.

INFLAMMATION OF THE EAR.

INFLAMMATION of the Ear, or Otitis is a disease common to children, and frequently met with in adults. The disease may be confined to the internal wall of the ear, or it may involve the drum or tympanum.

SYMPTOMS. Inflammation of the ear is attended with acute pain, frequently without much fever, but sometimes the febrile symptoms run very high, the brain becomes involved, and delirium, coma or convulsions take place. Swelling and redness, attended with throbbing, may be perceived by a careful examination, and which will serve to distinguish it from neuralgia, which last likewise manifests a periodicity in its symptoms not met with in otitis. Occasionally suppuration takes place, and sometimes remains for years, obstinately resisting all treatment.

THE CAUSES of otitis are usually, exposures to cold, as, exposing the ear to a draught of air, or trimming the hair of the head too short in cold weather, &c. Local injuries may also give rise to it, as inserting paper and other foreign bodies into the ear, as is often done by children; insects getting into the ear may produce inflammation; and it frequently occurs as a sequel to other diseases, scarlet fever for instance.

TREATMENT. If the disease be owing to foreign bodies in the ear, or an accumulation of hardened wax, these must first be removed; and to accomplish which will frequently cause some trouble and perseverance. Syringing the ear forcibly with tepid water thrown from a small syringe, is recommended for this purpose.

When the otitis is caused by exposure to cold, the feet may be bathed in warm water, and a warm fomentation of Hops applied over the ear, and occasionally renewed. If this does not ease the pain, two drops of Sweet Oil of Almonds to which one drop of Laudanum has been added, may be warmed and dropped into the ear two or three times in the course of the day. Or, the juice of Onion, and Laudanum, equal parts of each, may be dropped into the ear. Or, take Oil of Sassafras half a fluidrachm, Olive Oil one fluidrachm, powdered Camphor fifteen grains; mix, and dissolve the Camphor in the Oils. A few drops of this mixture, warmed, may be dropped into the ear, and a pledget of cotton may also be worn in the ear, moistened with the same. A few drops of Tincture of Digitalis in the ear, have been recommended. When the pain is very severe, with general derangement, a Mustard poultice may be placed behind the ear, and a purga-

tive be given. If the stomach is deranged, or filled with irritating matter, an emetic will be found beneficial.

When the fever is violent, with great pain, coma or delirium, in addition to the above local means, the general treatment recommended in inflammation of the brain must be pursued. When the disease is of a periodical nature, or is accompanied with periodic fever, Sulphate of Quinia, in some form, will be found useful.

When suppuration ensues, the ear must be syringed with warm soap-suds, after which, an infusion of Golden Seal, to which a small portion of Pyroligneous Acid has been added to correct the feter, should be injected; and this course may be repeated once or twice every day. Or, a decoction of equal parts of Golden Seal and Wild Indigo root, may be used instead of the above. Sometimes it will become necessary to use instead of the above, a solution of Sesquicarbonate of Potash. In conjunction with these local means, the bowels should be kept regular by small doses of the Compound Powder of Rhubarb and Potassa; and the Compound Syrup of Yellow Dock, or some other alterative, should be given and persisted in for some months.

INFLAMMATION OF THE EYES.

OPHTHALMIA is a term applied to Inflammation of the Eyes, whether of the acute or chronic form. All parts of the eye are subject to inflammation, more especially its outer covering, (conjunctiva) and the inner surface of the lids. At this place, *catarrhal ophthalmia*, *purulent ophthalmia*, and, *inflammation of the iris*, will be considered.

CATARRHAL OPHTHALMIA.

SYMPTOMS. The conjunctiva or white of the eye becomes swelled, and of a scarlet color, being more or less covered with bloodvessels, presenting the appearance of what is usually termed *bloodshot*; with this there is a sensation of heat, smarting, and pain, as if particles of sand were in the eye, and which pain is aggravated by rubbing the eye. There is much pain and uneasiness on exposing the eye to the light, and sometimes even on the least motion of the eyeball, so that the patient usually keeps the lids closed. A copious flow of hot, or excoriating tears, is also present. When the disease is very violent, or, in irritable habits, febrile symptoms are manifested.

CAUSES. Catarrhal ophthalmia may be produced by exposure to cold, sudden changes of temperature, blows and other injuries upon the eyeball, irritating vapors, foreign particles in the eye, improper exposure of the eye to strong light, overtasking the eyes by reading or writing late at night, intemperance, and other causes similar to those producing inflammation of other mucous surfaces.

This disease may be *determined* from rheumatic ophthalmia, by the presence of headache, the greater intolerance of light, and the severe, throbbing pain, common to the latter; beside in catarrhal ophthalmia the bloodvessels are tortuous and of a scarlet red color, and in the rheumatic form, they are straight, hair-like, radiated, and of a pink or violet hue. In rheumatic ophthalmia the sensation of roughness or foreign bodies in the eye is never

present. There is seldom any danger to be apprehended in catarrhal ophthalmia, when properly treated.

TREATMENT. The eye should first be examined, in all cases where it is inflamed, to ascertain that no foreign body is present irritating it; and if such are found, they must be at once extracted. The feet should be bathed in warm water for fifteen or twenty minutes, and which should be repeated two or three times a day; and during the intervals Mustard poultices should also be applied to them. Mustard may also be placed to the back of the neck when the inflammation is violent. In severe cases a cathartic, every day or two, until the active inflammatory symptoms have subsided, will be found very serviceable; and an attention to the surface of the body, bathing it occasionally with a weak alkaline solution, will materially aid in allaying the severer symptoms.

Applications should also be made to the eyes, as a fomentation of Hops in water, or a fomentation of Poppy leaves; and, when the pain is very severe, Stramonium leaves may be applied—the green leaves may be bruised and laid over the eye,—the dried leaves should be steeped in hot water, and employed as a fomentation. In some very severe instances, in which all previous remedies had resulted in no benefit, I have met with the most marked and immediate benefit, by applying cloths wet with cold water to the affected eyes, and changing them every two or three minutes. In one very aggravated case, in particular, this course had to be pursued for about thirty-six hours before any *permanency* of the benefit obtained was established. Other agents have been advised as local applications, as a poultice of Slippery Elm,—or a strong mucilage made by immersing the pith of Sassafras in distilled Rose-water. A poultice of Slippery Elm bark one drachm, Lupulin half a drachm, powdered Lobelia seed twelve grains, with sufficient hot water, has proved efficacious as a local application in severe cases; it should be changed every three hours.

When there is considerable restlessness, wakefulness, or nervous irritability, one or two doses of the Compound Powder of Ipecacuanha and Opium may be given toward bedtime, or the mixture of Tinctures of Gelseminum and Aconite, (see page 193,) may be given through the latter part of the day. I have found the tincture of *Kalmia Angustifolia* a very excellent remedy in inflammation of the eye.

During the above treatment, the patient must be kept in a darkened room, and the diet should be very light.

When the active inflammatory symptoms have subsided, the disease passes into the chronic stage, in which the eye still looks red and inflamed, with a great diminution of the pain, intolerance of light, and watery discharge. The treatment must now be changed, and means used to increase the activity of the absorbent vessels, and strengthen the eye. Various means are employed for this purpose, among which I will name the following:—

1. In most cases I find that a fluidrachm of Tincture of Aconite added to a fluidounce of a strong decoction of Golden Seal, has a very desirable effect. The eye should be bathed with it frequently during the day.

2. Take of Sulphate of Zinc one ounce, Rock Salt three ounces, Crocus Martis eight grains, rain-water two pints. Add the articles together, dissolve the salts, and, after allowing the mixture to stand twenty-four hours, filter. To be applied to the eyes as above.

3. Take of Golden Seal, Witch Hazel leaves, of each, in powder, a drachm, boiling water a gill. Infuse the powder in the boiling water for ten or twenty minutes, and when cold, strain. The eye must be frequently bathed with this.

4. The Compound Myrrh Lotion.
5. The Compound Lotion of Golden Seal.
6. The Compound Lotion of Zinc.
7. The Compound Ointment of Oxide of Zinc.

In conjunction with this treatment, the bowels must be kept regular, mild tonics administered, with a light, nourishing diet.

OPHTHALMIA TARSI, is an inflammation of the glands in the tarsus or edges of the eyelids. It is a chronic affection, occurs generally in scrofulous persons, occasions considerable irritation, and frequently causes a destruction of the eyelashes. It may be a termination of catarrhal ophthalmia, and should be treated by stimulating applications, as tincture of Red Pepper, either diluted or not, as the case may require. Should there be a small ulcer at the roots of the eyelashes, it may be touched with a solution of Alum, or a solution of Sulphate of Zinc. The application of the Compound Ointment of Oxide of Zinc, every night, will have a tendency to prevent the lids from sticking together in the morning; but should this occur, the lids may be washed carefully with warm milk, until they open without pain. The peculiar sticky or gummy matter which is secreted on the lids in this disease, must always be removed by washing with warm milk, previous to the application of any remedy.

I have found the following a very effectual application in ophthalmia tarsi;—to one fluidounce of a Saturated Solution of Sal Ammoniac, add one fluidounce of rain-water, and from two to six fluidrachms of Tincture of Capsicum, according to the degree of smarting it produces. This may be applied four or five times a day to the lids; and it should be aided by internal treatment, as the Compound Syrup of Yellow Dock, or the Compound Syrup of Stillingia.

PURULENT OPHTHALMIA.

SYMPTOMS. Usually a great itching is felt in the eye, or a sensation as if a particle of dust were between the lids and the eyeball, and this usually happens at night; this is succeeded by a sticking together of the lids, generally in the morning, owing to a secretion of mucus. The lids are somewhat stiff, there is great and uniform redness of the eye, but without pain, tension, or intolerance of light, and a watery fluid is discharged. The disease soon extends to the globe of the eye, with high vascular action and bright redness, great tumefaction of the membrane, and increased discharge. The conjunctiva suddenly swells, and becomes considerably elevated around the cornea, the cornea appearing, as it were, at the bottom of a pit. This swelling is called chemosis, and is often so great as to overlap, and nearly cover the cornea. The eyelids swell, and are almost immovable, the discharge is profuse and of a yellow color, and may continue for ten or fifteen days without much change. Finally the chemosis begins to shrink, the discharge diminishes, and becomes thin and gleety, and the parts which were the first attacked are the last in which the disease disappears.

The inflammatory symptoms vary from a mild character to one of great violence, being accompanied with sharp, lancinating pain, situated deep in the eyeball, and which is usually worse at night; sometimes a deep-seated, throbbing pain in the eye, comes on in paroxysms; or it may be violent and continuous, without any mitigation until the cornea bursts. The disease may terminate in bursting of the cornea, abscess of the cornea, ulceration of the cornea, opacity of the cornea, thickening or granulation of the lids, &c.

Purulent ophthalmia may be *discriminated* from catarrhal by the chemosis, the bright red membrane, and the profuse purulent discharge. The right eye suffers more frequently and more severely than the left, though the disease may attack either one, or both.

CAUSES. The disease is supposed to be propagated by contagion, though there is a diversity of opinions among medical men on this point. It frequently occurs epidemically, and seems to depend upon some peculiar condition of the atmosphere. And, under some circumstances, there is no doubt but it may be produced by exposures, injuries, and other circumstances that will occasion the catarrhal form.

The *prognosis* of purulent ophthalmia in the adult is not very favorable, as the disease is frequently unmanageable. If the cornea retain its natural transparency, the inflammation may be arrested by vigorous treatment; but if it be dull, with deep-seated pain in the eye and head, indicative of extensive inflammation of the eyeball, the termination will be doubtful. After partial suppuration, considerable ulceration, or interstitial deposition, recovery of sight may take place, especially if these changes occur toward the circumference and not in the centre of the eye.

TREATMENT. Everything must be done to subdue inflammation as rapidly as possible. The feet must be bathed in warm water for fifteen or twenty minutes, which should be repeated two or three times a day; and during the intervals Mustard should be applied to them, and along the spinal column. The bowels must be actively purged at first, after which they should be kept free, daily, by laxatives.

Local applications, similar to those mentioned under Catarrhal Ophthalmia, should be kept upon the eye, and it will be found, in most cases, more beneficial to apply them cold than warm, changing frequently. Much advantage will be derived from the cold water, used as described in the previous treatment. In addition to these applications, the eyes should be frequently washed with the following:—Take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm, strong decoction of Black Cohosh four fluidounces. Mix. This will sometimes occasion an intense pain upon the first, second, and third bathings, but afterward it will be found to have an excellent soothing and cooling effect. The severity of its first application should not prevent the practitioner from using it.

Internally, the inflammatory action may be mitigated by the administration of the mixture of Gelseminum and Aconite, in tincture, as recommended on page 193; or, a slight degree of nausea may be constantly kept up by small doses of Lobelia, either in powder or tincture, and which will be found to exert a powerful influence in overcoming the inflammation. The diet should be light, and the patient kept in a darkened room.

After the inflammatory symptoms have subsided, the bright redness of the conjunctiva gone, as well as the pain, and the membrane appearing paler, relaxed, and flabby, with a profuse discharge, the treatment must be changed. The diet should be more nutritious, and astringents applied to the eye, as, a strong decoction of Golden Seal and Geranium, in which a small portion of Alum has been dissolved. This may be dropped in the eye two or three times a day; but if it increases the pain and redness, it must be omitted, and not again used until the inflammatory symptoms have been subdued. Or, some one of the preparations named in the treatment of catarrhal ophthalmia, may be used. The patient should be allowed to exercise in the open air, exposing the eye to light, as much as it will bear, and should be much debilitated, tonics and alteratives must be used. The towels, linen, &c., used by the patient, must not be used by any other person, lest the dis-

ease be communicated to them; too much care in this respect, cannot be taken.

Any remaining granulation, or ulceration of the lids may be removed by the following:—Through a stout piece of a limb of tag alder, bore a hole lengthwise, from half an inch to an inch in diameter; fill this with finely powdered salt, close it at each end, and place it in hot ashes, where it can remain for some twenty-four hours or longer and slowly char. When the tag is almost all charred, remove it from the ashes, split it open, and remove the salt, which will be in the form of a roll; powder this finely, and keep it in a well-corked vial. To use it, blow some of the powder in the eye, through a quill, and repeat it two or three times daily. This will be found a most valuable application for the above, and several other affections of the eye.

Infantile Purulent Ophthalmia is very apt to terminate in loss of sight, if not timely attended to. It comes on a few days after birth, with a redness of the lids, and at first a slight discharge which causes a sticking of the lids together, when the child awakes from sleep. As there is pain on exposure to light, the eyelids are kept closed. If the disease be allowed to progress, the lids swell and become red even externally, and a profuse discharge of a yellowish purulent fluid takes place, which frequently flows over the face, staining the cap and linen. When the lids are separated, the eye cannot be seen until the discharge which covers it is removed.

This form of ophthalmia may arise from exposure of the child during its birth, to leucorrhœa, gonorrhœa, or other matter with which its mother may be laboring under; it may also originate from not properly washing the child, and other circumstances, as cold and damp, bad or insufficient food, &c. A similar affection is also met with in children three or four years old. If treated in an early stage before the cornea has become affected, the disease can always be cured. The eyes should be cleansed of all the matter discharged, by frequently bathing them with Rose-water or mucilage of Slippery Elm, and, in the meantime, cold or tepid water should be kept constantly applied over the eyes by means of linen cloths moistened with it and which should be frequently changed; or a poultice of Slippery Elm may be applied to the eyes, when there is much redness and swelling of the lids. The bowels should be kept regular by means of injections, and the action of light upon the child's eyes should be prevented as much as possible both during the treatment and for some days after a cure has been made.

When the inflammation has subsided, the eyes must be bathed several times a day, with a decoction of equal parts of Golden Seal and Witch Hazel leaves; or, if a more active application is desired, five or ten grains of the Sesquicarbonate of Potash may be dissolved in a fluidounce of the decoction.

INFLAMMATION OF THE IRIS.

INFLAMMATION of the Iris, or Iritis, may be accompanied with rheumatism, sometimes with gout, and not unfrequently with syphilis; hence the names rheumatic iritis, syphilitic iritis, &c., have been applied to these various forms. The disease is, however, in all instances, only a modification of one and the same affection.

SYMPTOMS. Uneasy sensations are experienced in the neighborhood of the eye, with pains about the forehead, brow, and orbit, extending to the side of the head; there is also a redness of the sclerotica or white of the eye, with intolerance of light and watery discharge. As these symptoms in-

crease in severity, the iris or that part of the eye which surrounds the pupil, and from which we judge of the color of the eye, whether blue, black, &c., becomes involved; its color undergoes a change, first in the lesser circle which becomes of a darker hue, and afterward in the greater which becomes green if it were originally blue or greyish, and reddish if it were brown or black. The pupil is contracted, its opening being deprived of the bright black color it naturally possesses, and the motions of the iris are impeded. Headache and feverish disturbance of the system are generally present. After a violent attack, with great diminution of sight, the symptoms subside, the eye recovers, and sight is restored. The iris is found to be connected to the capsule by adhesions of white color. The inflammation returns again and again, new adhesions take place, the pupil becomes more and more contracted, and finally vision is lost. Occasionally, the first attack may be so violent, as to occasion loss of sight.

CAUSES. It may be produced by cold, and is frequently attended with rheumatism, syphilis, &c. Some rheumatic persons have an attack or more every year, in which the sight becomes gradually destroyed.

TREATMENT. The treatment is the same as recommended in the previous inflammations of the eye, being prompt and energetic in proportion to the violence of the attack. It will also be proper to give an active cathartic for the first two or three days, and subsequently keep the bowels regular by laxatives. And any wakefulness may be overcome by the administration of the Compound Powder of Ipecacuanha and Opium, five or ten grains at bedtime.

In this disease, as well as in cases of almost insupportable pain in the eye from an active attack of inflammatory rheumatism of the eyeball, I have derived immediate benefit by the application of fresh *Stramonium* leaves, bruised, slightly moistened; and placed as a poultice over the eye; frequently every painful feeling will be removed in five minutes after the poultice has been applied. When the fresh leaves cannot be obtained, the inspissated juice of the leaves may be rubbed with Elm poultice and applied; the proportions being about two drachms of the inspissated juice to enough Elm poultice to cover both eyes. The dried leaves will not be found so beneficial.

In conjunction with this, when rheumatism is present, the following may be administered internally:—Take of Tincture of Black Cohosh one fluidounce, Tincture of *Colchicum* seeds half a fluidounce, Tincture of *Aconite* two fluidrachms. Mix. The dose is twenty or thirty drops, three or four times a day. After the disease in the eye is subdued, if rheumatism be present, treat the system according to the directions given under treatment of Rheumatism.

After the inflammation of the eye is completely overcome, there will be a debility, and morbid sensibility remaining, which must be treated by some local stimulant, as a strong decoction of Golden Seal, one fluidounce, to which a half fluidounce of Tincture of Prickly Elder may be added; or, if greater stimulation is desired, from one to four fluidrachms of Tincture of *Capsicum*, may be likewise added. A few drops of this may be placed in the debilitated eye, one, two, or three times a day, according to its capability of enduring the stimulating action. Indeed, the preparations named in the preceding articles, will frequently be found very useful for the above purpose.

In several cases where the virus from chancre had accidentally entered the eye, producing the usual symptoms, tending to a destruction of it, I have saved the organ by bathing it several times a day with a wash made by dissolving ten grains of the Chloride of Gold and Soda, in one fluidounce of rain-water.

INFLAMMATORY SORE THROAT, OR QUINSY.

QUINSY is an inflammation of the Tonsils, (or almonds of the ears,) but which may extend throughout the whole mucous membrane of the throat or fauces; and sometimes even to the Eustachian tube, causing more or less deafness.

SYMPTOMS. Quinsy usually commences with alternate sensations of heat and chills, soon after which a soreness and difficulty of swallowing and breathing is perceived, succeeded by an enlargement of the tonsils and swelling of the back part of the throat, attended with redness and pain. The pain is of an acute, lancinating character, and may extend to one or both ears. The voice becomes hoarse and nasal, the tongue is coated and there is a frequent but difficult expectoration of mucus, with more or less fever. As the disease advances, the difficulty of swallowing and breathing increases; the speech becomes indistinct; the throat very dry, with great thirst, and on attempting to swallow fluids they are frequently ejected through the nose; the tongue swells and is incrustated with a dark fur, and the pulse is full, hard, and frequent, beating from 100 to 140 in a minute. Sometimes, small white sloughy spots are to be observed on the tonsils, and in very violent attacks, there is a complete deafness. When the inflammation is very violent, the eyes become red, swollen, and watery; the cheeks florid and swelled; the patient is unable to open his mouth; respiration is performed with difficulty; and the patient is obliged to be supported in nearly an erect posture to prevent suffocation. Large tumors can be seen or felt on each side of the jaws, and which are painful on pressure. Sometimes delirium, or coma supervene. Both tonsils are frequently so much inflamed and swollen, that it is exceedingly difficult for the patient to swallow anything. Occasionally the tonsils swell so enormously as to touch each other, rendering the patient unable to speak or swallow, and even checking respiration, and thus occasioning death.

In some cases the inflammation rapidly subsides, terminating in resolution; but more frequently it terminates in abscess or suppuration, and occasionally in sloughing. When suppuration is about taking place, the parts affected become paler and less painful, a throbbing or sense of pulsation is felt, and there are slight chills. The matter may be discharged by the mouth, or it may pass into the stomach; in either case, being followed by immediate relief. When sloughing is about to ensue, a whitish or greyish spot may be seen on the tonsil, which will gradually cover its whole surface; it finally comes off, leaving a deep ulcer, which may be ultimately healed. Scrofulous persons are apt to be left with a chronic form of the disease, which may be excited into increased activity on exposures to cold, improper diet, &c.

CAUSES. The most common causes of quinsy are, sudden changes of temperature, dampness, wet feet, wet clothes, drunkenness, acrid or stimulating food; sitting near an open window while in a heated condition, or in a room recently plastered, or whitewashed; sharp substances lodged in the throat; and it frequently occurs as an epidemic. Strumous persons are most liable to it.

The *prognosis* is generally favorable; but occasionally instances are met with, where suffocation is threatened from the enlarged tonsils completely closing the air-passages, and in which the only chance is for the surgeon to make an aperture in the trachea, and form an artificial air-passage for respiration, until the inflammatory symptoms have subsided.

TREATMENT. An emetic given at the commencement of the attack will

not only remove any accumulations in the stomach, but will render the subsequent symptoms of a milder character, and sometimes will arrest the disease at once. But the emetic should not be given when the disease has so far advanced as to render swallowing painful and difficult. After the operation of the emetic, an active cathartic, as the Compound Powder of Jalap, should be administered, for the purpose of removing any morbid matters in the bowels. And it will be found salutary to procure daily evacuations from the bowels, if possible, by the administration of Seidlitz powders.

In order to aid in allaying the inflammation and relaxing the parts, the throat must be bathed externally three or four times a day, with the Compound Tincture of Camphor, applying it warm and with considerable friction, after which place a fomentation on the throat, as warm as can be borne, composed of equal parts of Hops, Mullein and Lobelia leaves, infused for a short time in hot water; or a fomentation of other bitter herbs may be substituted. If the Compound Tincture of Camphor is not at hand, a liniment may be substituted for it, composed of Olive Oil, Oil of Sassafras, Water of Ammonia, each, one fluidounce, powdered Camphor two drachms; mix. Some medical men object to these external stimulating applications, but they undoubtedly exert a useful counter-irritating effect.

The vapor of a hot decoction of bitter herbs, inhaled several times a day, will prove of much benefit; the following will be found to answer admirably: Take equal parts of Hops, Wormwood, and Mullein leaves, boil them in equal parts of water and vinegar; then put the decoction in some convenient vessel, over which place a funnel, and inhale the steam arising for ten or twenty minutes each time. A common teapot will answer to put the decoction in, inhaling the vapor from its spout.

During the course of the disease, the feet should be frequently bathed in warm, weak ley water; and the surface of the body should also be bathed with the same two or three times a day, especially when there are high febrile symptoms. Any restlessness or uneasiness may be overcome by a dose of the Compound Powder of Ipecacuanha and Opium, administered at bedtime. When the disease occurs as an epidemic, and the symptoms are of a periodical character, one of the preparations of Quinia, named under the treatment of intermittent fever, may be used with advantage.

Gargles have been recommended in this disease, but it is seldom that the patient can employ them, on account of the pain and difficulty attending their use; indeed they are not required when the tonsils are red and shining. More benefit will be derived from the inhalation of warm vapor. Lemon juice and honey, mixed together, and administered to the patient frequently through the day, allowing it to pass slowly over the parts, will prove very serviceable and refreshing, and of much greater utility than gargles. But when aphthous spots appear, or when the tonsils become of a dark livid color, a gargle will be serviceable; the following may be used: Take of Sumach berries one ounce, Cayenne Pepper one drachm, Salt three drachms, boiling water half a pint; mix, and when cold, add Vinegar half a pint. If this cannot be gargled, it may be thrown upon the parts by means of a syringe, or the patient may occasionally allow a little of it to trickle down his throat. Sometimes more benefit will be derived from a lotion of Nitrate of Silver ten grains, water one fluidounce, applied to the parts by means of a camels' hair brush.

I have known some very severe cases benefited by a poultice worn around the neck, made by roasting fresh Poke root, in hot ashes till it is softened, then mash and form it into a poultice. It must be applied warm,

and changed every two or three hours. This, of course, was aided by the inhalations of warm vapor.

After the more active inflammatory symptoms have subsided, a stimulating and astringent gargle may be used with advantage; thus, take of Sumach berries, Golden Seal, Witch Hazel bark, Geranium, each, equal parts; make a strong decoction, add two drachms of Alum to each pint, sweeten with honey, and gargle the throat frequently with it, while it is warm. Should symptoms of suppuration be present, known by the soft, pliable fluctuation of the tonsil, much suffering may be prevented, and any tendency to suffocation obviated by puncturing the part; the tongue must be pressed down with the handle of a spoon, and the swelling punctured with a common lancet, which, in order to prevent any accident, must be so covered with two pieces of pine, or other substance, as to leave only a small portion of the extremity of the lancet exposed. After the operation the above stimulating gargle may be used.

After the disease has been cured, relapses must be guarded against, by avoiding exposures to cold and damp, and by wearing flannel about the neck for several days afterward. Those who are subject to this disease, may prevent its attacking them by daily sponging the throat and neck with cold water, using a light but nutritious diet, and avoiding exposures to cold or sudden changes. When the disease assumes a chronic character, the following will be found a very valuable application: Take of a Saturated Solution of Sal Ammoniac four fluidounces, Tincture of Cayenne Pepper one fluidounce; mix. Gargle with this several times daily, or apply it to the tonsils by means of a camel's hair brush. When a permanent and troublesome enlargement of the tonsils remains, a portion will have to be excised by the surgeon.

Through the whole course of the active symptoms, the diet must be very light, consisting principally of barley-water, toast-water, orange-juice, &c.

INFLAMMATION OF THE PHARYNX.

INFLAMMATION of the Pharynx, or Pharyngitis, is commonly known as "sore throat." The *symptoms* are similar to those of quinsy, but with less fever, and no difficulty of breathing, although there is some difficulty in swallowing, and a copious mucous secretion from the part. The same *causes* that produce quinsy may also give rise to pharyngitis, and the *treatment* must be similar to that of quinsy.

CYNANCHE MALIGNA.

CYNANCHE Maligna, or Putrid Sore Throat, is considered by the major part of practitioners, to be a variety of scarlatina. The *symptoms* are chills, fever, quick pulse, pain and soreness of the throat, and frequently nausea and vomiting. As motion increases the pain, the neck is held constantly in one position. As the disease progresses, greyish, aphthous spots form upon the inflamed glands of the throat, which leave deep purple or black ulcers; the voice and respiration is rough and difficult, the pulse sinks, being quick and weak, the breath becomes fetid, and if the disease terminates unfavorably, bleedings take place from the nose, mouth, &c. It may be produced by any cause which will give rise to putrid diseases.

TREATMENT. This disease may be treated the same as malignant sore throat in scarlet fever. The inhalation of vapor, as mentioned under quinsy, may likewise be used, together with external fomentations. A plaster, made by melting Rosin, and adding to it equal parts, each, of Honey, and powdered Camphor, spread upon a piece of flannel, and worn around the throat for several days, has been highly recommended.

INFLAMMATION OF THE MOUTH.

INFLAMMATION of the Mouth, or Stomatitis, is an affection which is common to children of all ages.

SYMPTOMS. The mucous membrane of the mouth and tongue is unnaturally red and hot, and exceedingly painful when foreign bodies are brought into contact with them. The mouth is usually dry, but frequently there is a copious discharge of saliva at the commencement of the attack. The whole surface of the mouth may be involved, or only parts of it, as the tongue, cheeks, gums, &c. The child is uneasy, restless, and fretful, and is evidently in much pain when eating or suckling. Sometimes the bowels are disordered with flatulence and griping, and if the child be suffering from dentition, there may be some fever present, but not without.

CAUSES. The disease may be caused by irritating substances taken into the mouth, a disordered condition of the stomach and bowels, and painful dentition. Sometimes it occurs in certain eruptive diseases, as measles, scarlet fever, &c. It may also be occasioned in those more advanced in years, by dental operations, or by the accumulation of tartar around the teeth.

TREATMENT. Simple applications to the mouth are generally all that will be required, as a wash or gargle of an infusion of Elm bark and Borax; or, a mixture of water and Honey, each, seven parts, Alum one part. A very excellent remedy is a decoction of equal parts of Blue Cohosh root and Golden Seal. If diarrhea be present, the Compound Syrup of Rhubarb and Potassa may be given; if the stomach and bowels are otherwise deranged, a dose of the Compound Powder of Jalap, may be given. If the child is teething, cut the gums; and in older persons remove carious teeth when they are present.

FOLLICULAR INFLAMMATION OF THE MOUTH.

THIS disease is commonly known by the names of *Thrush* or *Aphthæ*. It is a common disease of infancy and childhood, but may appear at any period of life.

SYMPTOMS. Small white specks are first seen upon the tongue, lips, and the interior surface of the mouth and throat, which spread more or less rapidly over these parts, and in severe cases, are continued through the alimentary canal to the anus. These specks proceed to ulceration, and terminate by exfoliation or shedding of whitish crusts. Sometimes a small quantity of blood is exhaled from these ulcers, which dries, and forms a slight brown scab. The mouth is hot, the lips often swollen, the saliva constantly dribbling from the mouth, the breath unusually disagreeable, and suckling or eating is difficult, producing much pain. The pulse is quick but feeble, the bowels out of order, with watery or green stools, and vomiting is frequent. The child becomes pale, anxious, fretful, with an expression of distress, and rapid emaciation.

When the disease is mild, but few of these symptoms are present; but when severe, we find frequently in addition, much headache, severe pain in the bowels, and often typhoid symptoms, under which the patient may sink rapidly. If the disease extends to the pharynx, the glands are apt to enlarge, and if extended to the trachea, the voice becomes altered, harsh, and hissing.

CAUSES. The disease is most common among pale, delicate, and unhealthy children, as well as those who are brought up by hand. It may be caused by neglect, bad food, impure air, want of cleanliness, and is frequent in places where children are overcrowded. More often it is a secondary affection to derangements of the digestive organs, or to impaired health.

PROGNOSIS. When the disease is mild, the white crusts will fall off, and the little ulcers heal in a few days. In the severe and unfavorable form the aphthæ run together, forming more or less considerable ulcers, which have a dark or unhealthy appearance, with vomiting, diarrhea, small, quick pulse, and rapid emaciation.

TREATMENT. As the bowels are usually deranged, the Compound Syrup of Rhubarb and Potassa, should be given daily to keep up a regular action, to remove acidity of the stomach, and to overcome diarrhea. The mouth should be frequently washed or gargled with a strong decoction of Blue Cohosh root and Golden Seal, sweetened with Honey, and rendered astringent by the addition of some Alum; and a portion of this swallowed several times a day, will be of much advantage.

When the ulcers have formed, they may be touched once or twice a day with a solution of five or ten grains of Nitrate of Silver to an ounce of distilled water. In a number of instances I have derived decided benefit by washing them three or four times a day with the Tincture of Chloride of Iron, which may be slightly diluted at first lest it smart too severely; and in very young infants, a drop or two, or more, according to age, may be given every one, two, or three hours, in a sufficient quantity of water.

As an internal remedy Persesquintrate of Iron has been highly extolled: Take of Solution of Persesquintrate of Iron forty drops, Syrup of Orange half a fluidounce, water five and a half fluidounces; mix. The dose is a wine-glass half full, four times a day, to a child three or four years old; or in proportion to its age.

When the ulcers assume a brown hue, manifesting a tendency to gangrene, the mouth may be frequently washed with Yeast, or a solution of Chlorate of Potassa; and Yeast may be given internally, either alone, or in combination with equal parts of Olive Oil, and Sweet Spirits of Nitre; or, the Chlorate of Potassa may be administered internally in doses of three grains dissolved in sweetened water, to a child three years old, and repeated every four hours.

Should the anus become excoriated, wash it frequently with warm water, and after each bathing apply Lapis Calaminaris or the impure Carbonate of Zinc. And the surface of the body and limbs should be kept clean by daily bathing.

It will frequently be found beneficial to change the nurse of the child, and in older children to change the diet, which is best when consisting of milk, barley-water, toast-water, arrowroot,—and when much debility is present, wine whey, milk and wine, ale, porter, chicken broth, &c.

In nearly all cases of this disease, alteratives will be of much service, more especially in children of scrofulous habits; the Compound Syrup of Stillingia, or the Compound Syrup of Yellow Dock, may be given in appropriate doses in conjunction with Iodide of Potassium.

MUGUET OR WHITE THRUSH.

THIS disease differs from true Thrush in being a morbid secretion *upon* the mucous membrane of the mouth, and not occasioning any ulcers.

SYMPTOMS. It usually comes on with inflammation of the mouth, more or less severe, and which may not attract attention until small curd-like patches or exudations are discovered on the inside of the lips and about the end of the tongue, and which, if the child be suckling, may be mistaken for particles of milk. These spots gradually become more numerous, and run together, forming irregular patches, and covering more or less of the mouth and throat; they are exfoliated and renewed, leaving the mucous surface from which they are thrown off, of a bright red color but without any ulceration. The skin is hot and dry, the pulse seldom affected, and thirst rather inordinate; but when the disease is severe, and especially when it has extended into the esophagus or tube leading to the stomach, it is painful to suck or drink, and in some cases either of these are impossible. When it extends into the alimentary canal, it is apt to prove fatal.

CAUSES. This affection is more prevalent among infants, and may be occasioned by bad food, impure air, insufficient clothing, too much purgation, or insufficient removal of the meconium, the crowding too many children together in a small space, and it may also be propagated by contagion by the nipple. Sometimes it prevails as an epidemic.

TREATMENT. In the milder forms of the disease, the treatment recommended for inflammation of the mouth will be sufficient. In the severe forms the mouth may be frequently washed with a decoction of Golden Seal, in which some Alum has been dissolved; or the preparation named under Thrush may be used, of Golden Seal, Blue Cohosh, Honey, and Alum. In some cases a solution of Nitrate of Silver from two to six grains to an ounce of water will be found serviceable. The Tincture of Chloride of Iron used locally and internally, as named under Thrush, will very often be followed by prompt benefit.

If the bowels are deranged, Tincture of Podophyllin one part, Tincture of Leptandrin four parts, may be mixed together, and administered in small doses, sufficient to keep them regular without purgation. If diarrhea is present, or if the disease has extended through the alimentary canal, with excoriation of the anus, treat the same as recommended under Thrush. If much debility is present, Quinia and stimulants will be indicated. The diet will be the same as that advised in Thrush.

When the disease occurs as a secondary affection to some other disease, the primary one must be removed, before the local remedies will have any permanent effect.

ULCERATIVE INFLAMMATION OF THE MOUTH.

THIS disease, known as "Ulcerated Sore Mouth," somewhat resembles Thrush, but differs from it, in the character of the ulceration, which instead of being confined to the follicles of the mucous membrane of the mouth, may take place in any part of this membrane, and extend in an irregular manner. By some it is viewed as *Cancerum Oris*, but there is a material difference between the two. The disease may occur during infancy, but is more frequent among boys, and between the ages of five and ten.

SYMPTOMS. The disease usually commences in the gums, which become red, swollen, soft, and bleeding, and are soon covered with a soft layer of

greyish matter. The inflammation and ulceration extend to the corresponding portion of the mucous membrane lining the mouth and lips, commencing with small whitish spots, which enlarge and run together, until they form the large grey patches covering the erosion or ulceration. Usually the disease is limited to a small extent, but occasionally it extends over all parts of the mouth. If not relieved, the inflammation continues, and the ulceration deepens; the greyish layers of false membrane become detached and quickly renewed, thus perpetuating the disease. If the disease is severe, the sub-maxillary glands (situated beneath the jaw) are swollen, hard, and painful, the breath offensive, with more or less salivation. The suffering is severe, and the child is restless and uneasy, unable to suck, or eat. More or less fever is generally present, with a quick, weak pulse, loss of appetite, and emaciation. Sometimes the ulceration spreads so extensively that the teeth are loosened, and occasionally fall out.

CAUSES. It may be owing to a deteriorated constitution resulting from improper or insufficient food, want of cleanliness, unwholesome air, damp dwellings, or a disordered condition of the stomach and bowels. Occasionally it appears as an epidemic, and may also occur in the course of other diseases which produce constitutional debility.

TREATMENT. The bowels must be attended to, using astringent infusions if diarrhea be present, and mild laxatives for constipation. The child should be kept clean, removed to a dry, airy situation, and fed upon good nutritious diet, especially if it be debilitated.

The mouth should be frequently washed with some warm astringent infusion, and the ulcers touched with a solution of Nitrate of Silver. The Tincture of Chloride of Iron will also be found very valuable as a local application to the ulcers. Various other remedies have been found useful, as an infusion of Golden Seal and Geranium with Alum; an infusion of Red Root, Witch Hazel bark and Geranium; or a solution of Tannic Acid in Port Wine.

If the child be weak, Wine, Wine Whey, Sulphate of Quinia, &c., may be given; and in all cases, when no fever is present, the Compound Syrup of Stillingia with Iodide of Potassium should be administered daily.

In cases where the stomach is loaded, the treatment may commence with an active emetic. And where there is torpor of the liver, small doses of Podophyllin and Leptandrin will be of service.

GANGRENOUS INFLAMMATION OF THE MOUTH.

THIS disease, also known by the name of "Cancerum Oris," is one of the most terrific forms of inflammation of the mouth. All the preceding forms of inflammation of the mouth may be followed by gangrene in one form or other, but none of them are so rapid and destructive in their effects as the one under consideration. It is mostly observed in children, and following after some disease, but I have frequently seen it in adults.

SYMPTOMS. The symptoms vary. In some cases small vesicles, of an ashy, dark-red, or even black color, are observed within the mouth on the lips or cheeks, encircled by a red base, with little pain or swelling, more or less salivation, and a peculiar fetor. These vesicles pass rapidly into a gangrenous condition, with an augmentation of the pain, heat, and tumefaction. Dark or purplish spots appear in the neighborhood of the vesicles, which eventually form large sloughs; and they progress so rapidly, that in the short space of forty-eight hours, all the fleshy parts of the mouth and face may be destroyed by the gangrenous action. In other instances, the ulceration commences on

the gums, which at first present a white and spongy appearance, but which rapidly passes into ulceration and gangrene, also spreading and involving the jaws, cheeks, and lips. The breath becomes intolerably offensive, the teeth fall out, the soft tissues swell, become hard and purple, ulceration with sloughing ensues, and the discharge from the diseased parts are usually so acrid as to excoriate the parts over which it is permitted to flow.

At first the general health does not appear to be much affected, but as the disease progresses and the soft tissues are destroyed, an irritative fever ensues, with loss of appetite, emaciation, diarrhea, and death.

CAUSES. Authors tell us that it may be occasioned by impure air, bad food, and congregating children together in small rooms; but I am not disposed to believe this, as in all the cases I have seen the patients were under the influence of mercury, or had been previously treated by it. We are also told by authors that the disease is often a sequence of an attack of measles, scarlatina, &c. We are likewise informed that it never exists as a primary affection, but appears in children enfeebled by previous disease. One writer observes "that in all the cases he had seen, the children had a pale, bloated, sickly look, large belly, &c." My own opinion is, that cancrum oris is owing to the previous mercurial treatment employed in the various diseases under which the patients may have been suffering. Children and persons of a strumous habit are the most liable to this disease, and with such, mercury is very apt to produce its deleterious effects. And, indeed, dissection reveals tubercles in some portion of the system, in by far the greater number of cases, with occasional ulceration of the lining mucous membrane of the intestines, or enlargement of the follicular glands.

TREATMENT. The bowels must be kept regular by doses of a mixture composed of Charcoal three parts, Rhubarb one part, which may be added to some Indian meal gruel, and administered in doses sufficient to produce a daily evacuation; active purgation must be avoided. If diarrhea be present, it must be restrained by astringent infusions, with prepared Charcoal added; in some cases, the Tincture of Chloride of Iron, may be given four or five times a day, in doses suited to the age of the patient.

The surface of the gangrenous ulcers must be washed by a Saturated Solution of Sulphate of Zinc. Or, either diluted Muriatic or Pyroligneous acid, or Tincture of Chloride of Iron may be used instead. When the gangrene is external, various agents have been advised as local applications, thus—a poultice of Wild Indigo leaves, Charcoal, Yeast, and Pyroligneous Acid; or, Bethroot, Black Cohosh, Witch Hazel, and Sumach; or, Golden Seal, Wild Indigo leaves, and Nitre. An infusion or decoction of any of these, may likewise be used to wash or syringe the ulcers in the mouth. In very bad cases, the gangrenous surface may have to be cut away, because, to have any effect, the local applications must reach the healthy tissue. It has been advised by some, to apply strong Nitric Acid to cauterize the parts; the tongue, or other healthy parts, may be held on one side with a gilt or platinized spatula, and then apply the acid by means of soft lint tied to a quill. The cauterization should be complete, so as to obtain a healthy surface of the sore at all its parts. In twelve hours, examine the parts, and retouch wherever the mortification seems unchecked; and repeat this examination and retouching every twelve hours, until the sloughing process is arrested. In the interim, the mouth should be frequently washed or syringed with a solution of Chloride of Lime. As this is a very painful treatment, a careful administration of the vapor of Chloroform is recommended.

The patient should be kept clean, and the room well ventilated; his strength should be sustained by a proper diet, as arrowroot, sago, tapioca,

jellies, beef tea, and broths, with wine in each, wine, wine whey, &c. Sulphate of Quinia may be administered internally, and in some cases with Phosphate of Iron. The Chlorate of Potassa has been recommended as almost a specific in this disease; three grains may be given to a child three years of age, in some sweetened water, or wine, or porter, and repeated every four hours; it is said to complete the cure in from six to twelve days. The Compound Powder of Ipecacuanha and Opium may be given to allay pain and restlessness.

PAROTITIS, OR MUMPS.

MUMPS, Parotitis, or Cynanche Parotidœa, is a disease chiefly attacking children, though it is occasionally met with in adults. Generally the person is affected but once with it, during life. As it does not terminate in the manner usual to inflammatory diseases, some authors consider it not to belong strictly to this class of maladies.

SYMPTOMS. The affection commences with a soreness and stiffness about the neck, which is followed by a hard movable and painful swelling of the parotid glands, which continues to increase until about the fourth day, when it gradually subsides, generally disappearing in from seven to nine days from its first attack. The swelling usually affects both glands at the same time, sometimes after the disease has left one gland it appears in the other, and occasionally it is confined to but one gland. In severe cases the swelling attains a considerable size, causing pain and difficulty in breathing, swallowing, and opening the mouth. In mild cases there is but little fever, but when the swelling is great, there is commonly more or less heat and dryness of the skin, quick pulse, constipated bowels, high-colored and scanty urine, and furred tongue; and frequently the neighboring glands are involved. The skin over the swollen parts often becomes tense and tender, but seldom manifests any redness.

As the enlargement of the glands subsides, it will very frequently be found that the breasts of females and the testicles of males become swelled and more or less painful, and this translation of the disease is very apt to occur during the active stage, when the patient has imprudently exposed himself to cold and wet; and, from the same cause, it has occurred three or four days after the subsidence of the swelling in the jaws. Generally this translation of the disease is not unfavorable, and passes away in a few days, but sometimes it proves fatal, or occasions some permanent difficulty. I know of one man who, at the age of forty, suffered so severely from neuralgic attacks of the testicles, that the operation of castration was performed at his urgent request; the attacks had existed from youth, at which time mumps, and its translation to the parts occurred.

CAUSES. Mumps appears to be a contagious affection, and frequently exists as an epidemic. From its tendency to attack distant parts, it is believed by some, and perhaps correctly, to be of nervous origin.

TREATMENT. Mild cases of mumps require hardly any treatment, the bowels may be kept regular by mild laxatives; the parts attacked, as well as the face and head, should be kept warm; and great care should be taken to avoid exposure to cold and wet. Sometimes, bathing the feet during the febrile symptoms, as well as drinking freely of warm infusions of Balm, Catnip, Spearmint, Sage, &c. When the symptoms are severe, the Compound Powder of Ipecacuanha, and Opium should be given, and the swelling may be bathed with some stimulating liniment, after which keep

the part covered with flannel. A dose of the Compound Powder of Jalap, should also be given.

When the disease has been translated to the testicles or breasts, perspiration must be produced by the Compound Tincture of Virginia Snake Root, given in sufficient doses for the purpose; after which moderate diaphoresis must be kept up by the use of the Compound Powder of Ipecacuanha, and Opium. The patient must be kept in bed, and a fomentation of Hops and Stramonium leaves, equal parts of each, should be applied to the swelled parts, as hot as can be borne, and frequently renewed. A fomentation of Elm bark and Stramonium leaves will likewise be found useful. One or two active cathartics may also be given, avoiding exposure to cold during their action. And for some time after recovery, it will be well for the patient to wear a suspensory bandage.

The principal requirements in mumps are quiet and rest on the part of the patient, and an avoidance of cold; the diet should be very light

INFLAMMATION OF THE LARYNX.

INFLAMMATION of the Larynx, or upper part of the windpipe, is a rare disease, but when present is very rapid in its progress often destroying life, by suffocation, in a day or two. It is more frequently met with in connection with inflammation of the trachea. It is a very dangerous disease, and demands prompt and energetic treatment. The milder form of this disease is considered under the head of *catarrh*, or *influenza*.

SYMPTOMS. The disease commences with the usual symptoms of fever, as chilliness, succeeded by heat and dryness of the skin, and quick pulse; the voice quickly becomes hoarse and indistinct, and sometimes entirely gone; the breathing is painful and laborious, with a sense of stricture in the throat, sometimes almost amounting to suffocation; the pulse is quick and feeble, the eyes somewhat protruding and "bloodshot," the countenance livid or swollen, and the tongue furred. On examining the throat, there will be found a reddened appearance of its back part, the palate, and tonsils, and the epiglottis, (a valve over the upper part of the windpipe, situated behind the base of the tongue,) will be seen raised, swollen, and of a bright red appearance. This latter condition renders every attempt to swallow difficult and distressing, as in the act of swallowing it must close the glottis (or upper part of the larynx,) to prevent food or medicine falling into the larynx and causing strangulation. The muscles of the throat and chest are thrown into violent spasmodic action, threatening instant suffocation, causing the patient to be extremely restless and uneasy, changing his position often to obtain relief, and crying out for the admission of more air into the room. The pulse is now rapid and full, the skin dry and of augmented heat, tongue furred, urine scanty and reddish, and bowels constipated; in some respects the symptoms resemble those of croup.

Ultimately, the patient becomes weary and disposed to sleep, which, however, is prevented or interrupted by coughing and expectoration of a tough, gelatinous mucus; the face becomes pale and sunken; the lips purplish; the eyes glaring, protruding and watery, with a purplish circle around them; the extremities grow cold; the pulse feeble and unequal; respiration becomes more difficult and distressing;—sinking comes on, the pulse fails, stupor or coma takes place, cold sweat, and finally death.

CAUSES. Exposure to cold is the most common cause. It may be pro-

duced by long and loud speaking, by inhalation of irritants or irritating vapors, and is sometimes connected with measles, scarlet fever, croup, &c.

It may be *discriminated* from croup by the following symptoms:—in croup, there is difficult breathing, cough with a metallic, ringing sound, but no swelling of the fauces or difficulty in swallowing; in inflammation of the larynx, the cough is a suppressed wheezing, accompanied with a painful effort and a sense of suffocation, swallowing is painful and difficult, the voice hoarse, reduced to a whisper, or extinct, and the fauces and surrounding parts more or less swollen.

TREATMENT. In the early stage of the disease, an emetic should be given, for which purpose the Compound Powder of Lobelia may be given to adults, or the Compound Tincture of Lobelia to very young children. The emetic should be followed by a cathartic, as the Compound Powder of Jalap, with five or ten grains of Cream of Tartar added. When the least sense of constriction returns, or, if the symptoms are very urgent, the emetic may be repeated once in every twenty-four hours. In the meantime the Compound Tincture of Lobelia should be given in nauseating doses, to favor expectoration, and allay the inflammatory action; or some other nauseant and expectorant may be administered, if this be not at hand.

The warm vapor of vinegar should be inhaled several times a day, and when it can be used, a gargle, composed of vinegar and water, half a gill of each, salt, a teaspoonful, may also be used several times a day, with much advantage.

In addition to these means the throat and neck should be bathed two or three times a day with some stimulating application, as the Compound Tincture of Camphor, followed by fomentations, as hot as can be borne, of Hops and Mullein, or, Stramonium leaves, or a poultice of Onions; in several cases, I have met with most decided benefit from a poultice of warmed Cranberries around the neck.

The surface of the body should be frequently bathed with a warm weak alkaline solution, and the feet and legs may be immersed in it for fifteen or twenty minutes, after which Mustard may be applied to them, and, in very severe cases, along the course of the spinal column. Moderate perspiration should also be kept up, either by the nauseants above named, or by the administration of the Compound Tincture of Virginia Snake Root.

Upon the subsidence of the more active symptoms, there will frequently remain a harassing cough with more or less irritation of the throat and fauces, for which I have found the following compound very useful:—Take of a Saturated Solution of Alum, Syrup of Balsam of Tolu, each, two fluidounces, Elixir Paregoric one fluidounce. Mix. The dose for an adult is a table-spoonful several times a day, or, whenever the above symptoms are troublesome; children must take it in proportion to their ages. And in connection with this, the above gargle of vinegar, water, and salt, should be used several times a day.

Until the severe symptoms have subsided, but little food is demanded,—lemonade, orange-juice, cold water, &c., will be sufficient when they can be swallowed; on the decline of the symptoms, rice-water, barley-water, toast-water, &c., should alone be given, until the disease is thoroughly removed. The patient should be kept in a warm room, and after recovery, the utmost caution must be observed, that a relapse is not produced by exposure to cold or damp.

When all other measures fail in affording relief in this disease, it has been advised to make an artificial opening into the windpipe, for the pur-

pose of allowing the patient to breathe, while various efforts are at the same time being made to subdue the inflammation. This operation is not very painful, and in itself is not dangerous; it has succeeded in saving life in several desperate cases. The earlier it is performed the greater are the chances for success.

CHRONIC LARYNGITIS.

CHRONIC Laryngitis, or *clergyman's sore throat*, sometimes, but erroneously called *chronic bronchitis*, is a disease very common to lawyers, clergymen, teachers, auctioneers, and all persons who are in the habit of loud and long-continued speaking. The seat of the disease is principally in the glands of the mucous covering of the throat. The disease may extend along the windpipe until it reaches the lungs, and produces a true consumption.

SYMPTOMS. At first there is a slight irritation, or tickling sensation in the throat, with more or less dryness, giving rise to a hacking, hemming, or an endeavor to clear the throat, and this is usually worse in the winter than in the summer, and the expectoration is generally more copious in the morning. On attempting to speak, especially after a long silence, there will frequently be an inability to produce a proper sound, until the throat has first been cleared by hemming or hawking. Loud or long continued talking or reading produces irritation, hoarseness, or cough, with a dryness of the throat, causing the person to frequently drink water with the vain hope of relieving the dryness. The expectoration is white and frothy, but as the disease advances, dark or bluish spots or masses will be observed in it, and, sometimes it will be streaked with more or less blood. Passing from a warm to a cold atmosphere or room, produces difficulty of breathing, and in the advanced stage irritates the parts and gives rise to more or less cough; the same symptoms follow an exposure to dust, or when walking against the wind. In damp and cold weather the symptoms are generally aggravated, so much so, that the patient supposes himself liable to contract cold from the slightest changes of the weather.

Several or all of these symptoms may be present in any one person, and continue through life without causing any alarm, except when hoarseness and cough have been caused by some unusual effort of the vocal organs. Sometimes they disappear entirely, but return as soon as the organs have been tasked too much, or when a slight cold has been contracted. If the disease is permitted to progress without relief, the palate becomes swelled and elongated, frequently coming in contact with the base of the tongue, increasing the irritation or tickling, as well as the cough. The cough finally becomes very severe and troublesome, and is accompanied with an expectoration of a darker color than at first; upon examining the throat it will be found much redder than usual, and presents a rough, granulated appearance, in consequence of the enlargement of the glands or follicles. The voice becomes hoarse and rougher, and is more or less subdued, and in some cases there is a complete loss of the voice, but this aphonia happens only when the muscular organization of the vocal organs is affected by the disease. The system begins to suffer, the appetite is changeable, digestion impaired, the pulse gradually becomes more accelerated, the skin becomes dry and rough, and there is unequal temperature of the body, with debility and emaciation. When ulceration is present, it is indicated by a sharp, pricking pain on speaking and coughing; if it has extended

into the bronchial glands the expectoration becomes streaked at times with blood, and in other respects greatly resembles pus. Sometimes the disease runs its course rapidly, terminating fatally in a few months.

CAUSES. It may continue as the sequel of an acute laryngeal inflammation; or, it may be produced by an exposure to atmospheric changes, frequent colds, constant inhalation of dusty particles, especially of limestone dust in cities where this is used to pave the centre of the streets. Loud and continued speaking frequently occasions it, and I have often met with persons who immediately after an unusual effort of this kind, were affected with hoarseness, irritation of the throat, &c., terminating in confirmed chronic laryngitis. From my observations, I have every reason to suppose that much of this disease is occasioned by that secret and solitary vice, onanism or masturbation; and I have frequently seen scrofulous persons, who were given to this unnatural indulgence, die of laryngitis, called, however, by their physician, "consumption." And it will be noticed that chronic laryngitis is always more dangerous among the scrofulous, and those disposed to affections of the lungs.

TREATMENT. I must here testify to the fact, that I have known more cases of this disease cured by adopting the mode of speaking and lecturing, taught some years since by Prof. C. P. Bronson, than by the use of medication. And I would therefore advise all persons afflicted with the malady, to adopt his method of speaking, if it be a possible matter.

The treatment by medication consists in local and general remedies. The local remedies are the application of a solution of crystals of Nitrate of Silver to the parts, in the proportion of from forty to sixty grains to the fluidounce of distilled water; it is applied by means of a sponge fastened to the end of a whalebone probang, and should never be attempted by any one except a physician.

I have frequently found a solution of Chloride of Lime, applied as just named (say from five to ten grains, or even more, to the fluidounce of water,) to answer a better purpose than the Nitrate of Silver; and in some instances a solution of Sesquicarbonate of Potash.

In the milder cases I have found the inhalation of the vapor of Vinegar, frequently gargling the throat with a mixture of Vinegar, rain-water, and Salt, together with an absolute quietness of the voice, sufficient to remove all symptoms of the disease. And in the winter season, I recommend toasting the feet for half an hour or an hour before a fire previous to going to bed, and repeating it every night through cold and changeable weather. When the palate is found elongated, a portion of it may be cut off by a surgeon, without any danger, and this should always be done to lessen the irritation caused by it, and should the tonsils be enlarged they should likewise be properly excised by a surgeon. In severe cases, and when there is a loss of voice, an irritating plaster may be placed to the throat, and kept discharging as long as possible; and when the ulcer caused by it has healed, another may be placed upon the back of the neck. But I do not advise such a painful measure, except in severe and alarming cases. Ordinarily, a small portion of the following liniment will answer to apply once or twice a day to the throat and neck,—it produces an eruption:—Take of Oil of Turpentine, Oil of Olive, each, one fluidrachm, Croton Oil half a fluidounce, Oil of Origanum two fluidrachms. Mix, and apply.

The general measures are an attention to the bowels, keeping them in a state of regularity by diet, if possible; exercise in the open air, avoiding, however, dusty and vapory places, as well as damp and windy weather; keeping the surface of the body in a healthy condition by frequent bathings;

using a nutritious but easily digestible diet, avoiding spices, stimulants, and all vinous or spirituous liquors, as well as loud speaking, reading, or singing; and the internal use of the following mixture:—Take of Compound Syrup of Spikenard twelve fluidounces, Fluid Extract of Stillingia four fluidounces, Iodide of Potassium half an ounce; mix. The dose is a teaspoonful or two, in half a gill of water, to be repeated three or four times a day. A very useful agent to be used by persons in the earlier stages of this disease is composed of Canada Balsam one fluidrachm, Oil of Cubebs two fluidrachms, Oil of Stillingia half a fluidrachm; mix. The dose is five or ten drops on sugar, three or four times a day, and allowed to pass slowly down the throat.

CYNANCHE TRACHEALIS, OR, CROUP.

THIS disease has received many names, but that of Croup is the one ordinarily preferred. It is one of the most alarming diseases to which children are subject, being sudden in its attack, and rapid in its results. Children between the ages of one and twelve, are more liable to it, especially those under five years, and it occurs more frequently among males than females. Children of an irritable, nervous habit, and great susceptibility, are the most liable to its attacks, and with some children there is almost a constant tendency to a return of the disease, until the advance of age has removed the predisposition. It has occasionally been met with in adults, even as far advanced as seventy years.

SYMPTOMS. Croup may be divided into three stages. 1st. The catarrhal, or precursory stage, which is often absent. 2nd. The stage of development. 3rd. The stage of collapse or threatened suffocation. For the excellent description of symptoms which follow, I am mainly indebted to Dr. Churchill.

In the *first or precursory stage*, there are usually some catarrhal symptoms, sneezing, weeping of the eyes, and coughing, with a hot skin, quick pulse, and much thirst. But the most certain symptom, to which great importance has been attached, as indicative of an approaching attack of croup, is the change in the voice, a degree of hoarseness, or huskiness, as though the throat needed clearing. The cough is usually short and dry, with evident uneasiness in the windpipe, but an examination of the pharynx will detect no traces of disease. The tongue will be moist and coated, and the breathing will be proportionably rapid, in accordance with the amount of fever, quick pulse, and other catarrhal symptoms. This stage may last from a few hours, to one or two days, but commonly, seldom more than twenty-four hours. Sometimes the disease occurs fully formed, without any previous catarrhal symptoms.

In the *second stage, or stage of development*, after the first stage has increased in severity, or, frequently without any premonitions, the child is suddenly startled from his sleep by a sense of suffocation, with a hoarse, ringing cough, hurried and hissing respiration, and a rough, hoarse voice, with great alarm and distress. It is a peculiarity of this disease, that the first occurrence of the croupy cough takes place at night. The fits of coughing become more frequent and spasmodic, during which the inspiration is almost suspended, and the action of the heart accelerated. The efforts of the child are very great; the countenance becomes flushed, almost livid, and covered with sweat,—the hands are clenched,—the arms thrown about, all covering is rejected, and whatever might impede the access of air hastily removed; the body is erect, or recumbent, and occasionally with the head rigidly bent backward, but in whatever position he places himself no relief is obtained.

The eyes project, are red and watery, the arteries of the neck beat strongly, the pulse is quick and hard, skin very hot, breathing rough and wheezing, voice hoarse, thirst very great, with scarcely any expectoration. The hand is frequently carried to the larynx as the seat of distress, as if to remove some obstruction. The sound of the cough is very peculiar, somewhat resembling the crowing of a cock, or more like succussions of air through a brass tube, with a ringing metallic tone. During all these symptoms there is no difficulty in swallowing.

The cough, hoarseness, and difficult breathing appear in the night, and increase, together with the fever, until the morning, when they diminish considerably. This intermission may remain during a greater part of the day, the pulse, however, being frequent, the cough hoarse, and the breathing somewhat impeded. Toward evening, probably after a sleep, a still more violent paroxysm than that of the preceding night occurs, all the symptoms above-named become rapidly aggravated, the remissions are less perceptible, the cough more difficult, suppressed and strangulating—suffocation is more imminent, and there is an occasional vomiting and the expulsion of a glairy mucus, sometimes mixed with flocculent or membranous threads, affording temporary relief, occasionally there are streaks of blood in it. The croupal breathing is permanent and increases, the voice becomes broken, whispering, and suppressed, the bowels are costive, and the urine may be scanty, thick, and high-colored,—abundant, pale, and clear,—or, especially toward the close of the second stage, turbid and whitish. It is in this second stage that the secretion of false membrane occurs.

The *third stage*, or *stage of collapse*, may set in from the third to the seventh day, or even sooner, according to the intensity of the inflammation, or the peculiar constitution of the child. In this stage all the symptoms are aggravated, and there are no longer any remissions. The pulse is quick and weak, and often unequal and intermittent. The cough is less frequent, less sonorous, suppressed and suffocative. The voice low, whispering, or entirely lost. The respiration is difficult, loud and hissing, the movements of the larynx are extensive and incessant, the nostrils widely expanded, together with a powerful action of the muscles of the neck, chest, diaphragm, and abdomen. The head is constantly thrown back, cold and clammy perspiration on the forehead, sunken and dull eyes, livid or leaden color of the countenance, and the veins of the neck unusually distended. The tongue is coated and dark-colored, great thirst, and some little expectoration. The whole appearance of the child is one of great distress, of the agony of oppressed breathing, of the horrible dread of suffocation. It tries in vain for relief, turns on every side, changes its position, with anxiety and restlessness. Sleeping or awake the distress continues. From this condition it rarely recovers; there may be occasional remissions, after the expectoration of mucus and lymph, but it is only temporary, the distress increases, the respiration assumes a convulsive character, the air passes with more and more difficulty through the larynx, and in a short time, seldom above twenty-four hours, the child expires with signs of convulsive suffocation, or falls into a state of stupor and dies lethargic. Occasionally, when we imagine the symptoms to be more favorable, the child is instantly suffocated, owing to the partial detachment of the false membrane which forms a valve whose closure has proved fatal.

Croup may be milder, and run a less fatal course, but whether mild or severe, it must always be recollected that the disease very often suddenly acquires great intensity, and a few hours lost can never be regained. The disease has proved fatal in twenty-four hours, and again has lasted nine or

ten days. There is a great liability in croup to relapse, hence the patient should be diligently watched, until he has perfectly recovered.

Croup has been termed *inflammatory*, when there is a predominance of the inflammatory symptoms. It usually attacks plethoric children, of a sanguine temperament, and is the severest form of the disease. It is preceded by chills, strong, rapid pulse, difficult and forcible breathing, redness or lividity of the cheeks and lips, a hot, burning skin, and is marked by a more continuous and unremitting severity of symptoms.

When confined to the larynx, it has been called *laryngeal croup*, and is accompanied with unusual pain and swelling of the larynx, and occasional convulsions. It may terminate fatally in twelve hours, but rarely longer than five days.

When confined to the trachea it has been called *tracheal croup*. This form is less rapid, and has a less fatal progress; the cough and breathing though sonorous, have not the brazen sound of ordinary croup; the voice is less affected, and the suffocation is not so oppressive. This form may be prolonged to fifteen days, and may terminate in a chronic form of croup, or, extending downwards, terminate in bronchitis.

Spasmodic croup is where there is a predominance of nervous or spasmodic symptoms. In this form the child may go to bed perfectly well, and in one or two hours be awakened with perfectly formed croup, hoarse voice, ringing cough, difficult breathing, and threatened suffocation, which, if not relieved, will continue through the night, increasing in severity, but having a remission through the day. If taken early it is far more manageable than the inflammatory form, and the spasmodic irritation may be relieved before there has been time for the false membranes to form.

Croup is sometimes complicated with bronchitis, pneumonia, and other diseases, and also exists as a secondary affection of quinsy, malignant scarlet fever, &c.

CAUSES. Croup is undoubtedly an irritation of the larynx and trachea primarily, (but which may extend into the bronchial tubes,) giving rise to a peculiar lymphatic secretion, and a degree of spasmodic action, both of which affect the voice and breathing. The principal exciting cause is cold, a damp, changeable atmosphere, insufficient clothing, and epidemic miasma. Occasionally it is caused by dentition, the suppression of eruptions on the skin, inhalation of noxious gases, &c.

Croup may be *determined* from "spasm of the glottis," by the catarrhal stage, which is only present in croup, by the rough, hissing breathing, the hoarse voice, the cough, and the difficult inspiration and expiration, of croup. In spasm of the glottis the voice is unaltered, there is no cough, and the difficult breathing is not permanent, the inspiratory effort only being arrested, and, for the time, inspiration is absolutely stopped. There is high fever, quick pulse, thirst, and no convulsions in croup, except in the last stage; in spasm of the glottis there are no febrile symptoms, and there is a disposition to general convulsions.

It may be determined from "simple inflammation of the larynx," by the difference in the sound of the cough, and by this latter affection having no hissing, rough breathing, and no paroxysms of suffocation, as in croup.

It may be determined from "hooping-cough" by the hurried breathing, not difficult or hissing, as in croup, no metallic sound to the cough, and the complete relief during the intervals of coughing, without hoarseness or difficult breathing.

TREATMENT. Promptness and decision is always required in the treatment of this disease, as if there be any delay or inattention, or should it be improp-

erly treated, it may prove fatal within twenty-four hours. The first or catarrhal symptoms, must be treated according to the plan named under Catarrh. In the second stage it is always proper to commence the treatment with an emetic; I invariably administer the Compound Tincture of Lobelia for that purpose,—many others prefer the Compound Acetated Tincture of Bloodroot. After free emesis has been produced, either of these Tinctures must be administered in small doses for the purpose of causing slight nausea and easy expectoration. And, whenever there is great obstruction and difficulty in breathing, with the other distressing symptoms peculiar to this stage, the emetic should be repeated.

As soon as possible after the operation of the emetic, the throat, neck, and chest must be bathed with the Compound Liniment of Oil of Amber, after which apply a fomentation as hot as can be borne, composed of equal parts of Hops and Lobelia, infused in a mixture of equal parts of vinegar and water. These local measures should be repeated three or four times a day, and continued until the disease is removed, or until the patient has so far passed into the collapse stage as to render any further use of them unprofitable. The Compound Tincture of Lobelia and Capsicum may be substituted for the above liniment in cases where this cannot be readily obtained. In some instances, I have derived decided benefit from the application of a warm fomentation of Stramonium leaves; if these are used, the patient should be watched, to observe that the depressive effects are not too excessive. I entertain no fears in relation to the employment of this herb in croup—it has always been followed by favorable results in my hands. Roasted onions, roasted apples, cranberries, hot water, &c., have been advised as local applications to the throat, and have no doubt proved useful in some cases. So, likewise, has the plaster of Scotch Snuff, made by sprinkling the dry snuff on a greased linen, and applying it over the throat and upper part of the chest; in my own practice, this has proved serviceable in several instances. In very young children, a poultice of Hops boiled in water, on the surface of which pounded Garlies are placed, will be found an excellent application to the throat and chest.

Beside the above, when the inflammatory symptoms run high, with some determination to the head, the whole surface of the body should be bathed with a warm weak alkaline solution, the feet should be bathed in the same liquid for some ten or twenty minutes, after which Mustard poultices may be applied to the soles. If the head continue hot, and the feet cool, the feet and lower part of the legs may be enveloped in a cloth moistened with a strong solution of salt in water, and which may be changed every hour.

Much advantage will be derived from the frequent inhalation during the day, and at night, of vapor arising from vinegar in which hops have been boiled; and the benefit is no doubt owing to the fact that the vapor exerts a softening influence on the false membrane, which is readily soluble in Acetic Acid,—being changed into a diffuent and transparent mucus.

In obstinate cases, and where there are morbid accumulations in the bowels, a cathartic may be given soon after the operation of the emetic; but in other instances, the cathartic may be delayed until the following morning. The Compound Powder of Jalap will be found the best cathartic that can be given in this disease; when this cannot be obtained, Castor Oil may be substituted.

During the day, when there is a remission of symptoms, the Compound Tincture of Lobelia may be given in small expectorant doses, and the Compound Liniment of Oil of Amber be applied frequently to the throat and chest. But, after the operation of a mild cathartic, I have derived more

benefit from a mixture of Belladonna and Sulphate of Quinia than any other remedy; it may be given in the following form:—Take of Sulphate of Quinia ten grains, Tartaric Acid ten grains, water one fluidrachm; mix, dissolve the Quinia, and add Tincture of Belladonna three fluidrachms.

The dose is from three to seven drops every hour or two, for a child four years old; it may be given in some syrup, and should be omitted as soon as the croupy paroxysms return. The above liniment to be used in conjunction with it.

These are the means to be employed during the second stage of croup, and great care must be taken to administer no more medicine than is actually necessary. If the disease appears to subside under the influence of the emetic and local applications, nothing further will be required except careful watching. The child should be kept warmly clad, removed to a dry atmosphere, and placed upon a light diet, as, toast-water, barley-water, and the like; and it should likewise be kept in nearly an upright position in bed, to guard against suffocation.

It is seldom that the stage of collapse will follow the above course of treatment, if it be promptly instituted from the commencement of the attack. Should this stage, however, take place, and the patient be rapidly sinking, stimulants must be given, as wine, burnt brandy and ammonia, and concentrated infusions of mutton or beef; the surface should be bathed with whisky, salt and water; and injections of a Saturated Tincture of Prickly Ash Berries in Ale or Porter should be given. See page 181. In this stage, active medication is improper, perhaps the Scotch Snuff plaster will be found useful.

The operation of tracheotomy has been advised, as a last resource, in those cases which threaten suffocation, and in a few cases it has proved successful. If performed at all, it should not be delayed too long; the commencement of lividity in the face, or of a tendency to coma, are indications for the operation. I believe, however, that this operation will very rarely be required among those cases in which the treatment just recommended, has been faithfully pursued.

BRONCHITIS.

BRONCHITIS, or Inflammation of the Windpipe or Bronchial Tubes, is an inflammation of the mucous membrane of the bronchial tubes; it is a common disease of childhood, and is by no means rare among adults. It is divided into two stages, the acute, and the chronic.

SYMPTOMS. The acute form of bronchitis generally commences with the symptoms of a common cold, as chilly sensations, succeeded by fever, cough, accelerated breathing, and rapid pulse, with pain and soreness at the upper part of the sternum or breast-bone. At first the cough is hard, dry, and painful, but in from twenty-four to thirty-six hours, an expectoration of a clear, tenacious mucus takes place, which gradually becomes opaque and purulent.

This expectoration is frequently very profuse, rendering the breathing laborious, especially in young infants, it being more difficult in the recumbent than in the erect position, and is attended with a wheezing, rattling sound in the chest. When there is considerable obstruction to respiration, the countenance becomes bluish, on account of the imperfect oxygenation of the blood; at other times the face is flushed, with an expression of anxiety or distress. There is apt to be pain in the forehead, which is much aggravated on coughing. Shortly after expectoration has commenced, the severity

of the cough is somewhat lessened, and in a week or ten days convalescence ensues.

In severe cases the symptoms are much more intense; the fever active, pulse full and rapid, skin hot and dry, breathing rapid, wheezing, and difficult, and great thirst, cough more frequent and painful, and occurring in paroxysms, bowels costive, tongue loaded and the urine scanty and high-colored. Among children and weakly persons, there is apt to be a great depression of the vital powers, sometimes almost amounting to collapse, and the surface becomes cold and purplish from imperfect oxygenation of the blood. In these cases the pulse is small and rapid, and if the disease is about to terminate fatally, there will be drowsiness, insensibility, coma, or perhaps convulsions from suffocation.

Acute bronchitis is very common as a secondary affection in small-pox, measles, scarlet-fever, whooping-cough, and infantile remittent fever; and is frequently complicated with pneumonia. Bronchitis often arouses a latent tubercular disposition into activity, and tubercular consumption frequently dates from its occurrence.

The expectoration in the first stage is transparent and watery, as the disease advances it becomes viscid, somewhat resembling the white of egg, and in the last stage is frequently streaked with blood. When the inflammation is about terminating without suppuration, the expectorated matter becomes opaque, yellow, white, or greenish, and is attended with a great abatement of the symptoms.

CAUSES. Cold, or exposures to wet, sudden changes of temperature, and the like, are the most common causes, though it may be occasioned by the inhalation of irritating vapors or particles. It is almost always present with epidemic influenza.

TREATMENT. When the disease occurs in a mild form in adults, all that is necessary will be to bathe the feet for some fifteen or twenty minutes, dry them well, and afterwards keep them warm by a fire, or, if in bed, apply hot irons, rocks, or bottles of hot water to them; giving internally some warm lemonade for the purpose of producing a moderate degree of perspiration on the surface of the body; the bowels should be gently opened by some mild physic, as Seidlitz powder, or Rhubarb and Magnesia, &c. Sugar moistened with lemon juice will be found very beneficial for the cough; it may be used freely.

In infants a different course is required; it is generally safer to give at first an emetic; and afterwards an expectorant in some mucilaginous draught, as infusion of Slippery Elm, or of Flaxseed, should be administered every hour or two. The Compound Tincture of Lobelia will answer for infants, as an emetic, and, in smaller doses, as an expectorant. The bowels should be kept regular, the feet bathed in a warm alkaline solution, and considerable warmth be applied to the body.

When the disease is severe in its character, more active measures are demanded. An emetic should at once be given, and, for an adult, the Compound Powder of Lobelia, or, the Acetated Tincture of Bloodroot, will answer. This should be followed by a purgative, as, the Compound Powder of Jalap, or, a mixture composed of Podophyllin half a grain, Leptandrin two grains. And whenever the difficulty of breathing is considerable, with a wheezing, rattling sound, and high fever, the emetic may be repeated. The room in which the patient remains should be kept so warm that the surface of the lungs may not be irritated by respiring cold air; and the inhalation of warm vapor of vinegar, or of the steam from a hot infusion of bitter herbs, should be practiced several times a day; the most decided relief

is frequently obtained from these inhalations. The surface of the body should be frequently bathed, and perspiration promoted by the administration of the Compound Powder of Ipecacuanha and Opium, or, still better, by the Compound Tincture of Virginia Snakeroot. In many instances a spirit vapor bath will be followed by happy results. Mustard may likewise be applied to the soles of the feet, and a hot fomentation of Hops to the chest. In some cases, especially among children, a warm bath will be found useful.

For the cough various remedies have been recommended; I have found the following preparations more successful in my own practice:—

1. Take of Honey, Olive Oil, Sweet Spirits of Nitre, and Lemon juice, each, equal parts; mix. The dose for an adult is a teaspoonful three or four times a day, or whenever the cough is severe. This may be given at any stage of the disease.

2. Take of Syrup of Squill, Syrup of Ipecacuanha, Syrup of Balsam Tolu, Tincture of Bloodroot, and Elixir Paregoric, each, equal parts; mix. The dose is the same as above. This is best adapted to the second stage of the disease.

3. Take of Fluid Extract of Stillingia one fluidrachm, Syrup of Balsam Tolu, Syrup of Senega, each two fluidrachms; mix. Dose from ten to thirty drops whenever the cough is troublesome.

4. After the more active symptoms have subsided, much benefit will be received from the following mixture:—Take of Gum Arabic two ounces, Vinegar half a pint, Molasses half a pint; boil these together until the Gum Arabic is dissolved, then add to it Laudanum two fluidounces, Tincture of Balsam Tolu four fluidounces. The dose is a teaspoonful three or four times a day, or whenever the cough is severe. This is also useful in chronic bronchitis.

When the secretion is profuse, and the fever not very high, astringents may be administered, as, small doses of Tannic Acid and Ipecacuanha; or, Geraniin and Ipecacuanha, or, Alum. The following has been recommended:—Take of Alum forty-eight grains, water two fluidounces; mix, dissolve the Alum, and add to the solution three fluidounces of Compound Syrup of Spikenard. The dose for an adult is a table-spoonful, three or four times a day. Or, in place of this, the Alum mixture mentioned in Inflammation of the Larynx, page 255, may be used.

During the disease, the diet must be confined to barley-water, rice-water, toast-water, apple-water, &c. Children should wear flannel, and some care should be taken that the feet be kept dry. Frequently toasting the feet before a fire, will be found very advantageous in this affection, among adults as well as children.

CHRONIC BRONCHITIS.

SYMPTOMS. Chronic Bronchitis is attended with very little if any fever, the cough is more or less troublesome during cold and changeable weather, but is absent during pleasant, warm seasons, and the disease may continue thus for even a lifetime, without causing any serious consequences. But frequently it is more serious in its character; the cough is very troublesome with more or less expectoration, and is apt to be more distressing at night, and in the morning, particularly if the feet, damp with perspiration, are placed in contact with a cold floor, cold sheets, &c. The cough is very apt to occur in violent paroxysms, and is always worse in changeable seasons, or when irritating vapors, or floating particles of matter are inhaled; upon

the expectoration of mucus, the fit of coughing becomes somewhat relieved. Sometimes slight transient pains are experienced in the chest, and frequently, after a severe paroxysm of cough, a general aching pain will be felt for a few seconds in the breast. The expectoration at first, a whitish, viscid, frothy matter, becomes thick, and of a muco-puriform character, and is occasionally streaked with blood. The skin will be found dry and harsh, the urine high-colored, the tongue coated, especially in the morning, the appetite more or less impaired, and the bowels irregular in their action. As the disease advances, the pulse becomes quick, weak and small, the breathing short, more hurried and oppressed, with emaciation, night sweats, pale face, hollowness of the eyes, great debility, colliquative diarrhea, sore nose, purplishness of the lips, and the expectoration becomes more copious, as well as purulent, and sometimes quite fetid. This form may continue from one to several months, and then prove fatal. It presents many of the characteristics of tubercular consumption, from which it is difficult to detect it, except by auscultation and percussion.

CAUSES. Chronic Bronchitis may occur as the sequence of the acute form, or it may result from measles, and other exanthematous diseases, whooping-cough, protracted biliary affections, repeated changes from heat to cold, or from constant exposure to irritating powders, as among stone cutters, millers, workers in metals, &c.

TREATMENT. Emetics are a very valuable class of agents in this disease, and they may be repeated once in every week, and continued until the disease is removed. The Compound Powder of Lobelia is the emetic which I prefer using in this affection. Active purgation is by no means required; indeed, I consider it injurious in the chronic form of bronchitis; but the bowels should be kept regular, daily, by some mild laxative, and the following will be found the best:—Take of Powdered Rhubarb one ounce, Bicarbonate of Potash half an ounce; mix well together. The dose is from five to ten grains three times a day, in a table-spoonful of water, or sufficient to procure one daily evacuation from the bowels. In some cases, the following may be administered every night, for the purpose of regulating the bowels: Take of Podophyllin one fourth of a grain, Lep-tandrin one or two grains, loaf sugar five grains; mix, and triturate well together for a dose.

Diuretics are always useful, and those of a stimulating or balsamic character are to be preferred, as Canada Balsam, Balsam Copaiva, Cubebs, Queen of the Meadow root, Horseradish root, Uva Ursi, &c.

The skin must by no means be neglected; the whole surface of the body should be bathed every day or two, with weak ley water; the best time being previous to retiring for the night. And if a Spirit vapor bath be taken once in every week or two, according to the patient's strength, it will tend much to facilitate the cure. And, after the patient has become stronger, and the circulation of the capillaries more vigorous, the throat, neck, and chest may be sponged daily with cold water. To relieve the cough, various agents have been successfully employed, as the cough preparations named in the acute form of bronchitis, or some of the following:

1. Take of Inspissated juice of Poison Hemlock four grains, Ipecacuanha one grain, Sulphate of Morphia one-fourth of a grain; mix together, and divide into two pills, one of which may be taken when the cough is severe, and if necessary, repeated in half an hour, or an hour.

2. Take of Extract of Hyoscyamus, Ipecacuanha, Canada Balsam, Muriate of Ammonia, each, one ounce; mix together, and divide into pills of four grains each; the dose is one pill every two or three hours.

3. Take of Fluid Extract of *Stillingia* one fluidounce, Compound Syrup of Spikenard two fluidounces, Iodide of Potassium one drachm; mix together. The dose is a teaspoonful three times a day.

4. A very excellent preparation for chronic bronchitis, is made of Extract of *Hyoscyamus*, Alcoholic Extract of Black Cohosh, Iodide of Potassium, each, one drachm, Sulphate of Quinia half a drachm; mix thoroughly together, and divide into pills of four grains each, of which one may be given every two or three hours.

Diarrhea is best combated by the Tincture of Chloride of Iron, of which twenty drops may be given in a wineglassful of some astringent infusion, and repeated three or four times a day.

This Tincture also forms a very excellent chalybeate for those cases in which the blood requires to be improved. When much debility is present, or when the digestive process is torpid, much benefit will be derived from the moderate use of English Porter, and Scotch Ale, or Brown Stout to be taken at meal time.

When the expectoration is too copious, astringents may be used in conjunction with the other agents, as, Alum, Geraniin, Tannic Acid, &c.; a very excellent preparation is composed of two parts of Geraniin, and Hydrastin, with four of Alum, of which from four to six grains may be administered for a dose, in some honey, and repeated every three or four hours.

The patient should exercise in the open air during pleasant weather, and the use of flannel will be found advantageous in maintaining an equable degree of temperature of the surface of the body, and on retiring at night much relief and benefit will be derived by drying and toasting the feet before a fire, more especially in cold weather. The sleeping apartment should be large, not occupied by more than one other person,—should be well ventilated, and properly aired every day. The diet should be nutritious, and easily digestible, avoiding acids and greasy food; and the meals should be regular. In very severe and obstinate cases, it will be advisable for the patient to remove to a warm climate.

CATARRH OR INFLUENZA.

THESE are also, when very mild in their character, termed “colds.” When the seasons are changeable, all persons are liable to contract colds, no matter what climate they may inhabit, especially when they neglect the precautions necessary to observe in sudden and variable changes of the condition and temperature of the atmosphere. More persons are destroyed by colds, than by any other cause; and should a cold not terminate in some febrile or inflammatory disease, it becomes dangerous from repetition, gathering strength to destroy from neglect and delay. A simple cold is not always dangerous in itself, hence most people are indifferent to it, but this is wrong, for a cold is one of the worst enemies of the human race, and should be avoided as much as possible.

The mucous membrane, which commences in the mouth and nostrils, extends over the fauces, to the pharynx, esophagus, larynx, and windpipe, terminating in the air-cells of the lungs. When certain portions of this membrane are inflamed, we may have acute laryngitis, or acute bronchitis, &c., independent of disease of any other part, but in catarrh or influenza, this whole membrane may be involved. Generally, however, a cold or catarrh is considered to be that affection of the mucous membrane, in

which the inflammation does not extend beyond the larger subdivisions of the bronchia.

SYMPTOMS. A cold or catarrh usually comes on with a dull pain and sense of weight in the forehead, oppression at the chest, and some difficulty in breathing; the eyes become more or less red and watery, there is a sense of fullness and heat in the nostrils, soreness of the throat, dry cough, hoarseness, frequent sneezing, and general lassitude. In a short time a thin, acrid fluid is discharged from the nose, the cough becomes more moist, the expectoration being at first thin, white, and of difficult ejection, but soon becomes free, yellow, and thicker, with considerable mitigation of the cough. The patient is almost always worse at night, with increased fever, accelerated pulse, more severe pains in various parts, and more or less restlessness. Accompanying the disease there is always more or less aching in the limbs and body, thirst, loss of appetite and flushes of heat, alternating with chilliness, especially when the patient is in an atmosphere somewhat colder than usual. Sneezing and a sense of chilliness are often the first symptoms of an attack.

When the inflammation is confined to the mucous membrane of the nostrils, there is sneezing, a fullness and heat of the parts, with a thin, mucous discharge; when it extends to the lining membrane of the frontal sinus, it produces a sense of weight and pain in the forehead; when it spreads to the fauces and to the ears, it occasions more or less deafness; when to the larynx, or upper part of the windpipe, cough, hoarseness, and tightness, or pain at the upper part of the chest are present.

When catarrh prevails epidemically, it is termed *influenza*, during which the symptoms are much more severe than in ordinary catarrh, and the disease has heretofore proved more fatal in its results.

Ordinary catarrh occurring in aged persons, those of delicate constitutions, or those disposed to consumption, is very apt to terminate fatally, by giving rise to chronic bronchitis or tubercular consumption, and the same may be said of epidemic influenza. Similar results will follow repeated attacks of cold, or its improper treatment. Sometimes, asthma, or dropsy of the chest, follow as a sequence of catarrh. Infants laboring under catarrh, are said to have the "snuffles."

CAUSES. Sudden changes or exposures from a dry and warm, to a damp and cool atmosphere, or exposures to cold, damp, &c., especially when the body is heated and perspiring, are among the most common causes. Long standing on a cold ground, sitting when heated or fatigued in a cool place, imprudently diminishing the amount of dress, sleeping between damp sheets, want of proper clothing, and whatever will tend to check perspiration or chill the body will give rise to catarrh. When a person has once labored under a severe attack of the catarrh, the system in many instances, becomes more liable to subsequent attacks, even upon the most trifling changes of temperature, or exposure. But it must be recollected that, although those laboring under chronic laryngitis, or chronic bronchitis, are morbidly susceptible to atmospheric changes, yet it does not necessarily follow that the presence of lassitude, increased cough, &c., during such changes, are always owing to a fresh attack of cold.

TREATMENT. When the attack is mild, but little medicine will be required. In general, it will be sufficient to bathe the feet at night, in a warm weak alkaline solution, and confine the patient to bed, or during the day in a warm chamber, allowing him to drink freely of warm mucilaginous fluids, as barley-water, thin gruel, &c., which may be acidulated with lemon-juice, or, he may drink freely of warm lemonade. No physic will

be required unless there has been either previous constipation, or an accumulation of morbid matters in the alimentary canal, when a dose of the Compound Powder of Jalap may be administered. In ordinary cases of cold, most persons are in the habit of bathing and drying the feet well at bedtime, then drinking a good draught of some hot spirits and water, which produces perspiration during the night, followed by great relief in the morning. This is a pleasant curative mode, but the danger lies in an improper exposure the next day, which the patient is apt to hazard on account of his improved condition.

Among infants, keeping the bowels regular, the body warm, and administering some warm diaphoretic drinks, will be all-sufficient, with the exception of greasing the nose and forehead externally with tallow or goose oil, which, notwithstanding the light in which physicians view it, will be found very useful, or, in its stead, fomentations of warm water may be applied.

When the attack is severe, perspiration should be promoted by means of the Spirit vapor bath, which will frequently remove it without any further treatment; the patient keeping up perspiration for a few hours while in bed. If this does not answer, an active purgative may be given, and during its operation, great care should be taken not to allow the patient to become chilled. Should the larynx, trachea, or bronchial vessels become implicated in the attack, they must be treated as heretofore recommended under their particular heads.

When it is not convenient to administer the Spirit vapor bath, the Compound Tincture of Virginia Snakeroot may be given every hour or two, in doses to cause perspiration, and which may be assisted by drinking freely of warm diaphoretic infusions. For the cough, the agents named under bronchitis may be used with advantage; and to relieve irritation of the throat, it may be frequently gargled with a mixture of vinegar and water, equal parts, to which a little salt is added. Inhalation of warm vapor is always useful when the inflammation extends into any part of the windpipe. A very common, and at the same time a very efficacious domestic preparation for the cough attending catarrh, is composed of honey or molasses, and vinegar, heated together, and some fresh butter melted in the mixture; of this, a teaspoonful or two may be taken for a dose, and repeated as occasion may require.

When the attack is severe among infants, I consider it better to administer the Compound Tincture of Lobelia, to produce free vomiting, after which the treatment may be similar to the above, keeping the infant warm, and in some cases repeating the emetic in twenty-four hours. Both in adults and children, the Compound Tincture of Golden Seal, either diluted with water or not, according to its severity of action, may be applied to the lining membrane of the nostrils, by means of a camel's hair pencil, and repeated several times a day; it will exert a very favorable influence on the parts.

Among infants there is danger of asphyxia, from the obstruction in the nostrils, especially while they are sucking, and unable to breathe through the mouth. In such cases the passages should be kept as open and free as possible, and sometimes it will be well to feed them with a spoon, keeping them away from the breast for a few days. The following is said to be useful for adults in freeing the nostrils from the sense of obstruction experienced in catarrh: Take of Powdered Cubebs two drachms, Balsam Tolu six grains; mix well together, and add Powdered Extract of Liquorice one ounce, Syrup of Balsam Peru one fluidrachm, Powdered Gum Arabic

a sufficient quantity; mix all thoroughly together, and divide into lozenges of ten grains each. One is to be placed in the mouth and allowed to dissolve gradually; repeating the dose as required.

Sometimes in severe attacks of catarrh and influenza, much benefit will be derived from keeping the patient slightly nauseated all the time during the severe symptoms, in conjunction with the other treatment; and should symptoms of pleurisy, pneumonia, or other pulmonary affection, present themselves, they should be treated according to the directions given under the head of the particular disease developed. In epidemic influenza, after the more active symptoms have subsided, Sulphate of Quinia should be administered in some form, so that at least three or four grains of it may be taken daily; and this will be more especially necessary in case of much debility.

The diet should be very light, using liquids principally, as gruel, weak broths, &c. The patient should keep warm, and rather quiet; and after convalescence, he should be cautious not to expose himself too quickly to the external air. Should a cough remain after all the inflammatory symptoms have disappeared, the Cough Mixtures, Nos. 1, 2, 3, or 4, named under Bronchitis may be used, or the following: Take of Oil of Anise, Oil of Almonds, Canada Balsam, Tincture of Balsam Tolu, Sherry Wine, each, half a fluidrachm; mix together. The dose is half a teaspoonful, three or four times a day.

CHRONIC CATARRH, OR CHRONIC CORYZA.

ACUTE CATARRH, from improper treatment, or from a series of attacks, is apt to degenerate into a chronic condition, which is commonly known as "catarrh," or "catarrh in the head," and which is by no means an uncommon disease in this country. The disease may continue for years, causing pain in the eyes, drowsiness, cough, and emaciation. It may also follow as a sequence of other diseases, as scarlet fever, measles, &c.; and when the discharge is of a purulent character, it is most generally owing to syphilitic ulceration of the parts affected.

SYMPTOMS. There is a discharge of mucus from the nostrils, varying in quantity, which irritates the nose, occasioning sneezing, or, by falling into the throat and windpipe, it gives rise to more or less severe cough, which, if neglected, may terminate in consumption. Sometimes this discharge is so profuse, as almost to suffocate the patient, and not unfrequently the eyes become very sensitive and tender, and deafness may be present. The breath is apt to be offensive, and sometimes even the discharge.

TREATMENT. Frequently this affection will gradually disappear without any treatment; sometimes it will require medication; and in a few cases it becomes obstinate, debilitating the system very much, and requiring great care in the treatment. Ordinarily, an attention to diet, regularity of the bowels, moderate exercise daily, an avoidance of exposures to sudden changes of heat, cold, and dampness, together with the use of one of the following snuffs, will effect a cure:

1. Take of Bloodroot, Bayberry bark, each, in fine powder, one ounce, Powdered Myrrh, half an ounce; mix well together, and use several times a day as a snuff.

2. Take of Bloodroot, Lobelia, Bayberry, each, in fine powder, one ounce, Sesquicarbonate of Potash, half an ounce; mix together, and use as a snuff.

3. Take of Powdered Camphor half a drachm, Benzoic Acid ten grains, Powdered Opium three grains, Red Peruvian bark two drachms; mix thoroughly together, and scent with Oil of Bergamot, and use as a snuff; the above is sufficient to last five or six days.

In very obstinate cases it will be proper to apply the following Tincture to the nasal membrane as far as can be reached by means of a sponge probang or camel's hair pencil: Take of Cubebs, Golden Seal, Lobelia, Bloodroot, of each, one ounce, Capsicum two drachms, diluted Alcohol, three pints; mix together, and let the articles stand for several days, frequently shaking them. In addition to this, the warm vapor of Vinegar, or of Vinegar in which Hops, or Stramonium leaves have been boiled, should be inhaled through the nostrils, keeping the mouth closed, and repeating the inhalation several times a day.

In cases of scrofulous habits, or where the disease is of syphilitic origin, the internal treatment recommended for either scrofula or syphilis, must be pursued in addition to the above.

INFLAMMATION OF THE LUNGS.

INFLAMMATION of the Lungs, or Pneumonia, are the terms applied to an inflammation of the substance of the lungs; it is a disease to which adults are liable, and is by no means uncommon among children. In some places it is termed "lung fever." It is very apt to be complicated with pleurisy.

SYMPTOMS. Pneumonia is usually ushered in by a chill, or sensation of coldness, followed by febrile symptoms more or less marked; in a short time a dull and obtuse pain in the chest is experienced, which is not so severe in its character as the pain in pleurisy, and which is considerably increased on coughing, or making a full inspiration. The breathing is hurried and difficult, especially when lying on the affected side; a dry, painful cough is present from the beginning, but sometimes it is moist, and the expectoration varies both in color and consistence, being white, transparent and tenacious, semi-transparent or rust-colored, and frequently it is streaked with blood, which, however, is not an alarming symptom; the skin is dry with heat of the body, thirst, anxiety, and flushed face, which is sometimes swollen and of a purplish hue. At the commencement, the pulse is usually full, strong, hard and frequent, but as the disease progresses, it becomes weak, soft, and often irregular. The bowels are frequently costive in the commencement, but are apt to become liable to diarrhea; the urine is scanty and high-colored, and often is of a yellowish-brown color. The tongue is generally dry, and thickly coated with a white substance, and when the disease is connected with some derangement of the liver, the coat will be of a yellow, or yellowish-brown hue. If timely relief be not obtained, there will be considerable danger from the severity of the inflammation; the veins of the neck will enlarge, the face assume a livid aspect, and if the blood be effused into the substance of the lungs, it will cause a fatal termination.

Pneumonia is often associated with pleurisy, and also with bronchitis, which complications may render the true character of the disease very obscure; these are very common complications among children. The treatment, however, will be nearly the same. The bronchial complication in children may be suspected by observing a short, difficult, wheezing respiration; by the restlessness they manifest when lying down; by a cough of a bron-

chial character ; by the paleness of the countenance and the anxiety depicted upon it ; by the hard, frequent pulse ; pungent heat of the skin, with the exception of the feet and hands which are cool. The respiration may at times be free, and then suffocative, and as the disease progresses, the lips become purple, coma ensues, and in from three to six days the child dies.

CAUSES. Pneumonia is most commonly caused by exposure to cold and moisture, or to sudden atmospheric changes. It may likewise be produced by severe exertion of the lungs, as singing, loud speaking, or playing on wind instruments, and may likewise arise from the inhalation of irritating particles or gases, repelled eruptions, suppressed evacuations, &c. It occurs most frequently during the spring and winter, and occasionally during the other seasons when very cold and damp, or variable. In the complications with other diseases, and even when uncomplicated, the physician should always examine the chest by auscultation and percussion.

PROGNOSIS. One of the earliest symptoms of the decline of the disease is a free evacuation of urine, depositing a copious sediment on cooling ; sometimes a diarrhea, bleeding from the nose, or an abundant perspiration, are the indications of its decline by resolution ; more frequently, however, a slightly bloody, whitish, or yellowish expectoration, freely and profusely discharged, is a manifestation of an abatement of the disease. When the febrile symptoms subside, the pain in the chest diminishing, the expectoration becoming free and copious, and especially, when with these the difficulty of breathing is materially lessened, a favorable termination may be expected. On the contrary, delirium is a very unfavorable symptom, especially when accompanying a high degree of fever, great difficulty of breathing, dry cough, and acute pain. Sometimes the inflammation terminates in suppuration, in which an abscess forms on the affected lung, and the matter may be expectorated ; or, the abscess may open into the pleura, occasioning pleurisy, and causing sudden death. When an abscess has formed it may be known by an abatement of the pain and sense of fulness of the part, by frequent, slight shiverings, and by the patient being able to lie on the affected side without much uneasiness. The formation of an abscess is not always necessarily fatal, but it is more dangerous among strumous persons. Short, dry, and obstinate cough, short and difficult breathing, an ability to lie only on the affected side, pale countenance, turbid urine, flush of cheeks toward evening, emaciation, night sweats, and diarrhea, are the usual symptoms accompanying an abscess. The prognosis of inflammation of the lungs is always unfavorable when both lungs are affected.

Death usually takes place in pneumonia from suffocation, occasioned by blood being effused into the cellular substance of the lungs, and which may occur at any time from the third to the ninth day. It may also terminate in suppuration or gangrene. Gangrene rarely occurs, and is indicated by a sudden discontinuance of all pain, a pale or purplish countenance, a very weak and intermittent pulse, cold, clammy perspiration, dark-colored, offensive expectoration, fetid breath, hiccups, stupor, and death. Sometimes inflammation of the lungs terminates in hepatization, in which the air cells of the lungs are obliterated, and converted into a solid, flesh-like mass ; sometimes in dropsy, and not unfrequently, adhesions form between the pleura or membrane covering the lungs, and that lining the cavity of the chest. Persons once attacked by the disease, are more liable to returns of it, on being exposed to its causes.

TREATMENT. In all cases of inflammation of the lungs, an emetic administered at the commencement will be found very useful to remove accumulations in the stomach, unload the air-passages, promote the secretions gener-

ally, and equalize the circulation. The Compound Powder of Lobelia may be administered to an adult, for this purpose, and the Compound Tincture of Lobelia to a child. In severe and obstinate cases, a repetition of the emetic in the first days of the disease may become necessary. After the operation of the emetic, free perspiration must be produced, which may be best accomplished in the adult, when circumstances will permit, by the Spirit vapor bath—in children by the Compound Tincture of Virginia Snakeroot—in both, aiding the perspiration by the administration of warm infusion of Pleurisy root, or of Balm. Infants, however, and very young children must be placed in a warm bath for several minutes, then have a fomentation of bitter herbs, as Hops, Tansy, Wormwood, &c., applied over the chest as warm as can be borne, and changed often; and Mustard draughts, or draughts of bruised Garlicks, may be applied to the feet and ankles. The application of bruised Onions or Garlicks to the chest and back of infants and children, even when nine and ten years of age, will be found very advantageous, not only in this disease, but in many other pulmonary affections. I almost invariably use them, and find that their efficacy much more than counterbalances their disagreeableness. I have seen many obstinate and serious attacks terminate favorably by the continued use of these applications.

As more or less derangement of the liver is commonly present in this affection, it will be necessary to administer a purgative that will exert some influence on this organ; one grain of Podophyllin mixed with two grains of Leptandrin, may be administered every three or four hours until a free evacuation is produced. The purgative may be given during the time perspiration is being effected, so that its action may take place as the copiousness of the sweat diminishes, and care should be taken when the bowels are moving not to expose the patient to cold. In many cases an infusion of the root of Leptandra exhibited daily, according to the plan recommended in the treatment of Typhus fever, will prove very useful.

If the pain still continues to any extent, fomentation of bitter herbs must be placed over the chest as hot as can be borne, and these should be changed or renewed every hour or two. Inhaling the vapor of a hot infusion of bitter herbs, repeated several times a day, will afford much relief to the pain and cough; and mucilaginous drinks, as infusion of Marshmallow root, Elm bark, Flaxseed, &c., frequently repeated, during the active inflammatory stage, will be found to render the cough less troublesome. Bathing the surface of the body and extremities frequently with a warm, weak, alkaline solution, must never be omitted in these cases, especially when the inflammatory symptoms run high; and Mustard may also be applied to the feet and on the back along the whole course of the spinal column, being careful however, not to allow it to vesicate or raise a blister.

In cases where the inflammatory symptoms were very severe, I have given the following mixture with invariable success:—Take of Tincture of Gelsemium four fluidrachms, Tincture of Aconite twenty-four drops; mix; the dose is thirty drops every half-hour or hour, until the peculiar effects of the Gelseminum are produced. It allays the cough, pain, and intensity of the active symptoms, affording great relief to the patient. In those instances where periodicity is present, great care must be taken to observe the time of the remissions, that antiperiodics may be exhibited; two or three grains of Sulphate of Quinia may be given every hour during the remission, and which will frequently relieve all the severer symptoms of the disease with promptness.

After the more active symptoms have somewhat subsided, it will become proper to exhibit expectorants, to relieve the cough, difficulty and oppression

of breathing, and facilitate the raising of mucus. The compound Tincture of Lobelia will be found a very elegant preparation for this purpose. Or, the Compound Acetated Tincture of Bloodroot may be used. A mixture of equal parts of Syrup of Senega, Syrup of Squills, and Tincture of Lobelia, exhibited in teaspoonful doses every hour or two, will also be found an excellent expectorant. A powder composed of Capsicum, Ipecacuanha, each, one grain, powdered Opium half a grain, and a dose administered every three or four hours, mixed with Honey, will frequently afford permanent relief to the cough.

As the inflammation declines, if the pulse becomes weak with great debility of the patient, tonics and even stimulants will be required. Sulphate of Quinia, or decoction of Virginia Snakeroot may be given, and, if necessary, ale, porter, wine, or even brandy; wine whey, with from one to three grains of Carbonate of Ammonia added to each draught, will prove a valuable stimulant.

The diet should be light and cooling, as barley-water, mucilage of elm, lemonade, orange-juice, Indian meal gruel, roasted apples, arrowroot, panada, &c. The patient should be kept as still as possible during the disease, and not be permitted to speak more than is necessary, in order to make known his feelings and wants; and the sick chamber should be kept at a proper temperature, from 54° to 60° Fahrenheit. Great care should be taken during convalescence to prevent a relapse, which is very apt to occur on very slight causes, and may lead to tubercular consumption. If during convalescence, or afterwards, a troublesome cough remains, one of the cough preparations mentioned under Bronchitis may be given; or, the Compound Syrup of Spikenard; or, either of the following compounds:—1. To one gallon of good Cider Vinegar, add half a pound, each, of Balsam Tolu and Gum Arabic; dissolve these by means of heat, and add Refined Sugar, six pounds. When all is dissolved, remove from the fire and add Laudanum, eighteen fluidounces. Sometimes Molasses, or Honey, may be beneficially substituted for the Sugar. The dose is a teaspoonful, three, four, or five times a day, or whenever the cough is severe. 2. Take Comfrey root, Spikenard root, Elecampane root, and Hoarhound, of each, one ounce; boil in six pints of water to four pints, strain, then add four pounds of Loaf Sugar, and boil slowly to four pints. The dose for an adult is a wineglassful three or four times a day.

In cases of abscess, the life of the patient has frequently been saved, by making an opening between the ribs into the abscess, and allowing the matter to discharge; this however is seldom accomplished when the abscess is deep-seated in the substance of the lungs.

In recent cases of hepatization of the lungs, I have sometimes found considerable benefit from the following mixture:—Take of Muriate of Ammonia sixty-four grains, Fluid Extract of Wild Cherry four fluidounces; dissolve the Ammonia in the liquid. The dose for an adult is from half a tablespoonful to a table-spoonful, three or four times a day, at the same time using external irritation, if necessary.

TYPHOID PNEUMONIA.

THIS disease has been called by various names, as pneumonia notha, cold plague, winter fever, and congestive winter fever; it appears to be a combination of pneumonia with typhus symptoms. It is very common to some sections of country, and proves more fatal among the weak, aged, and those who have broken down their constitutions by excesses.

SYMPTOMS. The symptoms of typhoid pneumonia are similar to those of

pneumonia, with the exception of the additional typhus condition present. The inflammation, however, is of a less acute character than in pneumonia. The disease generally commences as a catarrhal affection with great weariness, apathy, dizziness, and pain of the head and back, but without any great degree of fever. As the disease advances there is much difficulty of breathing, with wheezing or rattling in the chest, together with a sense of tightness or constriction across the breast; an acute pain in the side is very frequently experienced, with cough. The cough is short, dry, and distressing, being, however, attended at times with an expectoration of mucus, clear or streaked with blood; occasionally, no cough is present. When the cough is very violent, it not only increases the pain in the chest, but causes severe headache, and sometimes vomiting. Pains are at times experienced in the limbs. As the disease continues to progress, the more active symptoms disappear, a dull pain is experienced across the chest, which is seldom complained of, unless the patient is questioned concerning it, the difficulty of breathing is increased, more or less drowsiness or stupor comes on, together with some of the symptoms common to typhus fever in the prostrating stage. The skin becomes harsh and dry, with an unevenness of temperature; in most cases, the tip and edges of the tongue will present a very red appearance, while the upper surface of this organ will frequently be thickly coated with a yellow or brownish fur; the bowels will be tender, and rather disposed to swelling and tension, feeling like a drum; and diarrhea is very common, the discharges being of a dirty-yellowish color, and often containing flakes of mucus.

CAUSES. The disease is supposed to be epidemic at times, or caused by malarial influence, and is usually connected with a cold, damp, and changeable condition of the atmosphere. It is more prevalent during winter and spring, than the other seasons.

PROGNOSIS. When the difficulty of breathing is less difficult and oppressed, the expectoration more free and copious, and the pulse becomes more natural, the disease will be apt to terminate favorably. When the breathing becomes hurried and laborious, the expectoration scanty and not freely discharged, with great prostration, the case is almost hopeless. Delirium is a very unfavorable symptom.

TREATMENT. This will be similar to that named for pneumonia, while the symptoms of inflammation are present; and similar to that for typhus fever, when the symptoms of oppression and exhaustion manifest themselves. A mild emetic in the early stage of the attack, when the breathing is much oppressed, and the expectoration scanty, will be of service, and may be repeated if the symptoms require it. Active cathartics must be avoided, yet the bowels should be gently evacuated daily, during the whole course of the disease, for which purpose an infusion of *Leptandra* may be given, as directed under typhus fever; or, *Podophyllin* one grain, *Leptandrin* eight grains, may be thoroughly mixed, and divided into four powders, of which one may be given for a dose, and repeated two or three times every day, according to its action. As there will frequently be remissions, or periodic symptoms present, the Sulphate of Quinia, or the Valerianate of Quinia, may be given in grain doses every hour of two, during the remissions. In other respects, the surface of the body, cough, &c., will require a treatment similar to that recommended in pneumonia.

Great care should be taken to avoid all harsh and active depletory measures when the symptoms of debility come on. Mustard should be applied to the extremities, chest, and between the shoulders; ale, porter, wine, or even brandy, will be required according to the degree of prostra-

tion, and the susceptibility of the system. Injections of the Tincture of Prickly-Ash berries must by no means be omitted, not merely to lessen the tendency to tympanitic distension of the abdomen, but also as a stimulant to arouse and preserve the action of the vital powers. Carbonate of Ammonia five or ten grains to a fluidounce of water, or other liquid, has also been recommended as a stimulant, to be occasionally administered in teaspoonful doses. With the use of stimulants do not neglect nutrition, as mutton or beef tea, calves' foot jelly, &c., which should be exhibited as the stomach will bear them. I have found the following a very efficacious preparation in this stage of the disease:—Take of Sulphate of Quinia six grains, Leptandrin twelve grains; mix, and divide into twelve powders, of which one is to be given every hour. In other respects, treat similar to the low stage of typhus fever, not forgetting expectorants to relieve the breathing and expectoration. But the stimulating expectorants must be used, as Senega, Ammoniac, Squill, Balsam Tolu, Canada Balsam, &c. The following will be found a useful expectorant:—Take of Syrup of Senega, Syrup of Balsam Tolu, Emulsion of Ammoniac, and Tincture of Prickly-Ash berries, each, one fluidounce; mix. The dose is from half a teaspoonful to a teaspoonful four, five, or six times a day, according to the exigencies of the case.

During the course of the disease, the patient should lie in bed with his head and shoulders considerably elevated, and in other respects, the management should be the same as in pneumonia.

PLEURISY, OR PLEURITIS.

PLEURISY, or Pleuritis, is an inflammation of the pleura, a membran which lines the chest and also forms a covering which envelopes the lungs, and is frequently associated with inflammation of the lungs. It is more usually met with during the spring and winter seasons.

SYMPTOMS. Pleurisy usually commences with chills, succeeded by heat, thirst, restlessness, and other ordinary febrile symptoms. These are followed sooner or later by an acute pain in the side or chest, which is much aggravated on making a full inspiration, and is accompanied with hurried, difficult breathing, and a dry, hacking cough. Sometimes the pain occurs as the very first symptom. Coughing, breathing, and moving about, increase the pain, as well as lying upon the affected side. Persons laboring under an attack, lie upon the unaffected side, and endeavor as much as possible to breathe without much expansion of the chest, respiration being chiefly performed by the muscles of the abdomen. And when effusion takes place, the patient will shift his position and lie on his back. The pulse is hard, strong, and frequent; the tongue is coated; the patient very restless; the urine scanty and high-colored, and the bowels torpid.

The pain may be located to one spot, but generally it extends over a large extent, and sometimes implicates both sides of the chest. When the substance of the lung is also inflamed, there may be an expectoration of mucus, which will be streaked with blood, if the disease has extended to the bronchial mucous membrane. In from forty-eight to sixty hours, the pain lessens, or ceases entirely, indicating that effusion has taken place; but in severe attacks, the pain will continue long after effusion has occurred.

CAUSES. The most common cause of pleurisy is cold, from improper exposure. It may also be occasioned by draughts of cold water, after being heated by active exercise, by the suppression of certain discharges, by the

recession of exanthematous affections, by the excessive use of ardent spirits, and by all the causes which usually give rise to other inflammatory complaints.

DISCRIMINATION. Pleurisy may be mistaken for pleurodynia, a rheumatic affection of the intercostal muscles, but in this latter there is usually an entire absence of febrile symptoms as well as cough; in pleurisy both expiration and inspiration are carefully and slowly performed, while in pleurodynia the expiration is performed as in ordinary breathing, the inspiration alone being slow and cautious; beside, in this latter affection, rheumatic pains will have been felt in other parts.

PROGNOSIS. By a proper course of treatment, pleurisy usually terminates favorably by resolution or absorption, the febrile symptoms abating gradually, the pain becoming much diminished, and the respiration becoming more easy and natural. But if the inflammatory symptoms have been severe, the pain ceasing suddenly, with a small and feeble pulse, pallid countenance, cold extremities, and general prostration, the prognosis is very unfavorable. When the disease occurs in strumous habits it is apt to prove more obstinate. When it arises from tuberculous ulcerations of the lungs, or other complications, and especially when pus is discharged in the pleural cavity, it almost always proves fatal.

TREATMENT. In a practice of twenty-four years, during which time I have treated many hundred cases of pleurisy, I have not lost one patient, in whom the disease appeared in an uncomplicated form. The first object is to produce perspiration, which will promptly relieve the pain, and lessen the inflammation. If the strength and condition of the patient will admit, a Spirit vapor bath should be administered; otherwise, the Compound Tincture of Virginia Snakeroot may be given in teaspoonful doses, and repeated every half hour until free perspiration ensues, and which will generally be followed by prompt relief. This tincture may be given in an infusion of Pleurisy root, Catnip, or Balm. In conjunction with this, the whole of the affected side should be covered with a fomentation of bitter herbs, as Hops, Tansy, Wormwood, &c., applied as hot as can be borne, and which should be renewed every five or ten minutes, and continued until positive relief is obtained. This course will in almost every instance be followed by great alleviation or a total cessation of the pain and other inflammatory symptoms. If the pain ceases entirely, nothing further than care and an avoidance of exposure which may produce a relapse is necessary. If there is merely a slight relief of suffering, or, if the pain returns, an emetic must be given as soon as possible, for which purpose, the Compound Powder of Lobelia will be found useful. And this should be followed by an active cathartic, as the Compound Powder of Jalap, or, the Compound Powder of Leptandrin. After the administration of the purgative, instead of waiting for its operation, it will be advisable to at once produce perspiration again, as above, with the use of hot fomentations. It will rarely be found that the disease will continue after this active medication, especially, if it has been attended to at an early period. But should more or less pain continue, with cough, the following may be given with great advantage: take of Tincture of Gelsemium four fluidrachms, Tincture of Aconite twenty-four drops. Mix, and administer thirty drops every half-hour, or hour, until the peculiar effects of the Gelsemium are produced, after which the intervals between the doses may be lengthened. Or, in the absence of this mixture, the Compound Tincture of Virginia Snakeroot may be given in half teaspoonful doses every two or three hours, to keep up moisture of the surface. An infusion of Pleurisy root,

or, of Crawley root, or of equal parts of both, may also be drank freely. When a severe cough remains it may be overcome by an infusion of Pleurisy root, Wild Cherry bark, each two parts, Bloodroot one part—administer it in small doses, frequently repeated, and sufficient to keep up a slight nausea.

After this treatment, should cough and pain still continue, treat the case similar to that named for inflammation of the lungs. During the active febrile symptoms should they assume a well-marked periodical character, Sulphate of Quinia should be administered during the remissions, or when the active symptoms are at their minimum.

The diet and regimen should be the same as in inflammation of the lungs, and great care should be observed to guard against any fresh exposure to cold, as a relapse is apt to prove fatal.

CHRONIC PLEURISY.

CHRONIC PLEURISY may be the sequence of an acute attack, or it may assume this form from the beginning.

SYMPTOMS. There is but little fever, and when present it generally appears at night; the cough is slight, dry, or attended with a small expectoration of mucus; dry, vague pains in the chest; shivering; pulse hard; countenance pallid and emaciated; loss of appetite, and night sweats. Sometimes the affected side swells or becomes enlarged in consequence of the great effusion, with protrusion of the intercostal spaces, (spaces between the ribs,) and occasionally there is displacement of the heart. When the substance of the lung is involved, the cough is very troublesome.

PROGNOSIS. This is usually unfavorable, especially when hectic fever and night sweats are present. The disease may be cured spontaneously by reabsorption of the effused fluid; by its making a passage through the pulmonary tissue into the bronchial tube, when it is coughed up; or, by a spontaneous opening through the walls of the chest, when it is discharged externally.

TREATMENT. Although a very disagreeable and painful course, yet there is no measure so beneficial as the application of the Compound Tar Plaster over the seat of the disease, which should be continued until a free discharge ensues, and which discharge should be kept up for several weeks, if the patient can possibly bear it. And this plaster may be intermittently applied until the pain has been permanently removed.

Internally, for the purpose of stimulating the absorbents to take up the effused fluid, as well as to promote the action of the kidneys, the Compound Syrup of Stillingia may be given in teaspoonful doses, and repeated every three or four hours, and to each dose of the syrup, from four to six grains of the Iodide of Potassium should be added. Another excellent agent for the promotion of absorption is composed of Muriate of Ammonia sixty-four grains, Fluid Extract of Wild Cherry four fluidounces; dissolve. The dose is a table-spoonful three times a day.

In addition to these measures, the cough must be relieved by some of the expectorant preparations, heretofore named under Bronchitis, Pneumonia, &c. The bowels must be kept regular by small doses of Podophyllin and Leptandrin, but they should not be actively purged. The surface of the body should be bathed two or three times daily with a stimulating wash, made by adding spirits to a weak alkaline solution, and the drying should be done with brisk friction until a glow and redness of the skin is produced.

Diuretics will often be found beneficial; equal parts of Pleurisy root, Hair-cap moss, and Burdock seed, may be made into a decoction, and drank freely.

The diet should be nutritious and easily digestible, as bread and milk, roasted potatoes, cooked eggs, oysters, boiled meats, birds, &c., and in cases of great debility, ale, porter, wine, &c. The patient should be kept quiet, and free from exposure to cold, sudden atmospheric changes, night air, &c.; in some, a short ride in an open vehicle during warm, pleasant weather, will be very beneficial. In some cases when the effusion is so great as to threaten suffocation, the operation of paracentesis, has occasionally been the means of saving the patient's life by allowing the effused liquid to escape externally.

INFLAMMATION OF THE HEART.

UNDER this head, I will have reference to inflammation of the muscular structure of the heart, *carditis*,—inflammation of the lining membrane of the heart, *endocarditis*,—and inflammation of the membranous sac which envelopes the heart, *pericarditis*. These are generally treated upon, as separate and distinct diseases, but as their symptoms are very similar, as well as the treatment recommended for them, I have judged it best to embrace them under one head.

SYMPTOMS. Inflammation of the heart or its membranes, usually commences with the symptoms common to most inflammatory attacks, as chills, heat and dryness of skin, thirst, flushed face, full pulse, &c. These are succeeded by rapid, imperfect, and often unequal breathing, and an acute lancinating pain about the region of the heart, which may extend to the shoulder. This pain, especially in pericarditis, is aggravated by pressure over the heart, as well as by a full inspiration. There will also be a dry, harassing cough, which augments the patient's sufferings, and generally a sense of suffocation will be experienced. Motion, or exercise will increase the pain and difficulty of breathing to a greater or less extent. The features are haggard and expressive of much suffering, with a degree of anxiety; the heart beats violently and irregularly; a sensation of fainting is present more or less constantly; at first the pulse is full, hard, and bounding, but speedily becomes small, frequent, and unequal, and frequently cannot be observed at the wrist; the appetite is deficient; the tongue coated white; the bowels constipated; the urine insufficient and high-colored; the skin is often bathed in sweat, as in acute rheumatism; and when the diaphragm or midriff is involved, there will be a distressing, and painful hiccough.

CAUSES. These affections are most commonly owing to the presence of acute rheumatism, the disease either attacking the heart primarily, or, being translated to it from some other part of the system. They may likewise occur from other causes, and are sometimes met with in combination with pleurisy, Bright's disease of the kidney, &c.

PROGNOSIS. These attacks are of a very serious character, and may terminate fatally in a very short time; though it is stated that, even when left entirely to themselves, without any care or treatment, not more than one in six cases is wont to prove fatal. The principal evils to fear are the secondary or chronic affections resulting from the acute attack.

TREATMENT. I have obtained more benefit in treating these affections, by sudorific or sweating medicines than by any other. Copious perspira-

tion may be produced by the Spirit vapor bath ; but I prefer the administration of the Compound Tincture of Virginia Snakeroot, in teaspoonful doses, repeated every half-hour or hour, its action being aided by drinking freely of a warm infusion of Pleurisy root, or Pleurisy root and Crawley. After free perspiration has occurred, it should be kept up for one, two, or three hours, or longer, according to the degree of pain and difficult breathing. If the bowels are costive, or contain accumulations of fecal matters, an active cathartic may be advantageously administered, as, the Compound Powder of Jalap, adding about ten grains of Cream of Tartar to the dose ; or, the Compound Powder of Leptandrin may be substituted. The cathartic may be occasionally repeated through the course of the disease, whenever found necessary from the presence of costiveness, pain, difficult breathing, &c. An excellent cathartic in this disease is an infusion of two parts of Leptandra root, and one part of Blue Flag root, a table-spoonful of which may be given every hour or two, or sufficiently often to produce the desired result. Mustard plasters applied to the feet, on the chest over the region of the heart, and along the whole course of the spinal column, will be very useful in severe and obstinate cases.

The above course will frequently overcome the disease at once ; but should the pain and difficulty still remain, though in a minor degree, it will be advisable to attend to the surface of the body, bathing it several times a day with a warm, weak alkaline solution ; and administering internally one of the following preparations: 1. Take of Tincture of Gelsemium four fluidrachms, Tincture of Aconite root one fluidrachm ; mix. The dose is from fifteen to thirty drops every half-hour or hour, until the peculiar effects of the Gelsemium are produced, after which the medicine should be given at intervals sufficiently often to continue these effects in a mild degree. 2. Take of Tincture of Colchicum Seed, Tincture of Black Cohosh, each, one fluid-ounce ; mix. The dose is from thirty to sixty drops every half-hour or hour, according to the degree of inflammatory action, and the influence of the remedy. In cases of severe pain, from three to six drops of the Tincture of Aconite root may be added to every dose, or, to every second or third dose, according to the influence it exerts upon the system. 3. Tincture of Sheep Laurel may be given in doses of from five to ten drops every hour or two, according to its influence. Either of these agents will lessen the violent action of the heart, allay the inflammation, and thereby modify the pain and difficulty of breathing. Digitalis is an agent I do not prefer in these inflammations, and, therefore, do not recommend it.

Diuretics will be found a very important class of agents, and among them I know of none equal to an infusion of Hair-cap moss ; it may be used alone, or in combination with Cleavers. The bathing and Mustard poultices, above named, must be used as required, with an occasional cathartic. Too much depletion is hurtful ; therefore, after the first copious perspiration is maintained for three or four hours a repetition will not be necessary. Any restlessness, or want of sleep, may be overcome by a pill of the Inspissated Juice of Poison Hemlock, say two, three, or four grains, at bedtime ; or, from eight to ten grains of the Compound Powder of Ipecacuanha and Opium ; or, Lactucarium, Lupulin, &c., may be given in sufficient doses.

The patient should be kept free and quiet, not permitting him to be annoyed by anything ; the temperature of his room should not be too elevated, but rather cool and comfortable ; the diet should be simple and not stimulating, principally fluids and farinaceous vegetable infusions. The period of convalescence must be closely watched, both to avoid a relapse, and to ascertain if any chronic difficulty is about to ensue.

Should an effusion remain in the pericardium, or, chronic disease of the valves of the heart remain, as known by difficulty or shortness of breathing, palpitation of the heart, jerking and intermittent pulse, &c., the patient must be placed upon an alterative course. The Compound Syrup of Stillingia with the Iodide of Potassium, will be found very valuable. The Compound Tar Plaster may, in addition, be worn between the shoulders, or over the region of the heart, and the discharge produced by it kept up for a long time, intermittingly. And any excessive palpitation of the heart may be lessened by the Tincture of Sheep Laurel, or, by a pill, as above, of the Inspissated Juice of Poison Hemlock.

INFLAMMATION OF THE STOMACH.

INFLAMMATION of the Stomach, or Gastritis, is an inflammation of the lining mucous membrane of the stomach, which may also, in a greater or less degree, involve its peritoneal coat or covering. The inflammation may be either acute or chronic.

SYMPTOMS. Acute inflammation of the mucous lining of the stomach most usually involves the peritoneal covering, and the patient experiences a burning heat in the region of the stomach, with more or less pain, swelling, nausea, and vomiting; and which symptoms are aggravated by everything taken in the stomach, by motion, deep inspiration, and by pressure on the part. In all inflammations solely of mucous tissues, pain will not be an accompanying symptom; but it will always be present as other tissues become involved, either from sympathy, or from an extension of the inflammation in them. Intense and most distressing thirst is present, which it is very difficult to allay, for, unless fluids be given in very small quantities, say a teaspoonful at a time, they are immediately ejected, with an increase of pain. There is likewise considerable trouble in swallowing, from spasmodic action of the esophagus. Great restlessness, with constant rolling of the body, wakefulness, small, contracted, hard, and frequent pulse, dryness and heat of the skin, great anxiety, oppression and great prostration of strength, are present when the disease is fully developed. A harassing cough is usually an attendant symptom; the countenance is shrunk and contracted; the tongue clean, with elevated papillæ, and preternaturally red at the point and edges; the bowels are constipated, except in protracted cases, when from extension of the inflammation to the bowels, diarrhea will take place. As the disease augments in violence, the difficulty of breathing increases, as well as the pain caused by deep inspiration; there is great loss of strength, with faintness, hiccough, an intermittent pulse, cold, clammy sweats, coldness of the extremities, perhaps tympanitis, delirium, stupor or convulsions, and death.

CAUSES. Acute Gastritis is seldom met with, except as a complication with some other disease, as gout, repelled exanthemata, bilious fever, &c., or, it may be caused by acrid substances taken into the stomach, as arsenic, corrosive sublimate, mineral acids, oxalic acid, improper food, or an undue quantity of liquor; drinking cold water when the body is heated or over-fatigued by exercise; wounds, blows, &c., have also occasioned it.

PROGNOSIS. The termination of gastritis is always doubtful; it may suddenly destroy the patient, even in the course of a few hours, especially when violent; or, when less severe, it may be followed by a train of distressing and painful symptoms, embittering the subsequent existence of the patient. When it is caused by corrosive poisons, producing disorganization of the

stomach, the countenance is pale and sunken from the beginning, and no reaction occurs, the patient sinking rapidly. When gastritis is about to terminate favorably, the pain and vomiting gradually subside, the urine is free with a brick-dust sediment, the bowels are moved, the pulse becomes more soft, full, and compressible, and a moderate moisture of the surface takes place.

TREATMENT. When inflammation of the stomach is caused by some poisonous substance taken into the stomach, the first measure should be its prompt evacuation by an emetic—for which purpose the Compound Powder of Lobelia in a heaping teaspoonful dose, and given in some Boneset tea, will be prompt and effectual. At the same time, as well as for a time after the emesis, the proper antidote to the poison must be administered. In cases of mineral acids and caustic alkalies, the antidote should precede all other measures in order to neutralize them at once; in such cases, vomiting is of little importance.

After the ejection or neutralization of the poison, the inflammation at first excited may continue, and must be combated by the ordinary means for subduing inflammation of this organ; these are, the application of Mustard poultices to the feet, along the whole length of the spinal column, and over the pit of the stomach; and as soon as considerable redness has been produced remove them, applying hot fomentations of Hops and Stramonium leaves in their stead. These Mustard poultices, as well as the fomentations, may be renewed from time to time, according to the urgency of the symptoms; and in all instances, the whole surface of the body should be bathed several times a day with a weak alkaline bath, drying with considerable friction. If the patient is able to have perspiration induced by means of the Spirit vapor bath, it will afford great relief; but he should not be placed to any great inconvenience to further this indication. To relieve the thirst, and at the same time aid in lessening the inflammation, cold and mucilaginous drinks must be given in very small quantities at a time, say a teaspoonful, adding to each draught, a few drops of Tincture of Aconite root; and the patient may be permitted to hold from time to time a small lump of ice in his mouth to slowly dissolve away, or it may even be swallowed. Cold infusion of Marshmallow root, Elm bark, or of Elm bark and Peach leaves, may be exhibited for the same purpose. The bowels should be moved once or twice a day by means of stimulating laxative injections, as, take of Castor Oil two fluidounces, Tincture of Prickly Ash berries half a fluidounce, Compound Tincture of Virginia Snakeroot two fluidrachms, Infusion of equal parts of Boneset and Senna, half a pint. Mix, for an injection.

Emetics should never be given in inflammation of the stomach, except to remove acrid or poisonous substances; and the administration of drinks or medicines must be given in very small quantities, or they will certainly be thrown up by vomiting. Indeed, the less the stomach is disturbed by anything thrown into it, the better will it be for the patient. Care should be taken not to administer stimulants, as wine, ale, &c., from a mistaken idea that the weakness of the patient demands them; for, if this be done, the symptoms will be aggravated, and the patient may die suddenly.

In very severe attacks of gastritis dry cupping over the region of the stomach, in conjunction with the preceding measures, has proved beneficial; a large tumbler is generally used for this purpose. In some cases, cold water applied to the pit of the stomach, by means of towels, and repeated every half hour or hour, has answered a most excellent purpose toward allaying the inflammatory symptoms.

The various measures adopted should be perseveringly and energetically pursued, until all tenderness or pressure over the region of the stomach disappears, and the other symptoms are rapidly subsiding. Should it become necessary to use means for promoting the tone and energy of the stomach, after the inflammatory symptoms have been subdued, the following will be found a very excellent preparation for this purpose:—Take of Golden Seal, Swamp Milkweed, Quassia, and Sassafras bark, equal parts, make a strong infusion, and administer it several times a day in teaspoonful doses. In this instance, I prefer this infusion to the use of Hydrastin, which is not so readily soluble in the stomach. Or, equal parts of Unicorn root and Golden Seal, may be prepared and administered in a similar manner.

During convalescence great care should be taken not to overload or distend the stomach with too large a quantity of food. At first, Gum Arabic water, barley-water, toast-water, rice-water, &c., may be given; and when the inflammation is entirely overcome and the stomach somewhat strengthened, arrowroot, sago, milk, chicken-broth, beef-tea, soft-boiled egg, &c., gradually and carefully accustoming the stomach to its usual diet.

CHRONIC INFLAMMATION OF THE STOMACH.

CHRONIC Inflammation of the Stomach, or Chronic Gastritis, is an affection not unfrequently met with, and is often mistaken for dyspepsia. The term "Dyspepsia," is applied to a disease of the stomach which differs in many respects from the one under consideration, and which will be treated of hereafter; indigestion, however, is a common attendant of chronic gastritis, and some writers consider that this latter affection is a variety of dyspepsia. Still, it will be necessary to bear in mind that if, from a mistaken view, chronic inflammation of the stomach be treated the same as the ordinary forms of dyspepsia, the symptoms will be rendered more severe, and a lasting injury be inflicted upon the patient.

SYMPTOMS. The patient will experience more or less distress and pain in the region of the stomach, especially after eating, and also when pressure is made; his appetite becomes irregular and fastidious; the food is imperfectly digested, in consequence of which accumulations of gas take place, which, when passed by mouth, are sometimes exceedingly offensive. The appetite will sometimes be very craving, but on eating a mouthful or two the patient is satisfied, or perhaps becomes nauseated. At other times the appetite will be entirely lost, with an unpleasant taste in the mouth. Nausea and vomiting frequently follow eating; and, generally, after a full meal, there will be an aggravation of the tenderness or pain in the stomach, together with headache. The thirst is as variable as the appetite, being more commonly augmented. The uneasiness in the stomach may pass into pain, which may be acute, dull, or lancinating, and may extend to the back, and edges of the ribs; or, there may be a sense of fulness, weight, distension, constriction, or a tormenting heat or burning in the stomach. The tongue is covered with a whitish fur, and is almost always of a vivid red at its tip and edges; or the whole surface of the tongue may be smooth, glossy, and increased in redness; occasionally there will be no preternatural redness, nor any fur. With this increased redness of the tongue, the pulse will be found small, tense, and thread-like, and between eighty to ninety beats or more in a minute. If the inflammation has not extended beyond the stomach, the bowels will be costive; but diarrhea may be present from an extension of the disease to the mucous lining membrane of the intestines. The urine is variable in quan-

tity, generally high-colored, giving a deposit upon standing. Coldness of the extremities is a common symptom in an advanced stage, and if the disease is not removed, emaciation takes place more or less rapidly, the patient becomes hypochondriacal, and may linger out a term of years in constant misery. In some instances, cough is present, the pulmonary organs become implicated, and with all the symptoms of tubercular consumption, dissolution occurs in the course of a few months.

CAUSES. Chronic inflammation of the stomach occasionally follows the acute form; it more often supervenes on febrile attacks, as scarlet fever, small-pox, typhus fever, &c., and especially when the already debilitated stomach, after convalescence from these diseases, is irritated by an improper amount of indigestible food thrown into it. Intemperance in eating and drinking may occasion it. Excessive venery, and especially masturbation, is a frequent cause. The improper use of emetics and purgatives is likewise a common cause. With some persons there is a peculiar predisposition to chronic gastritis.

PROGNOSIS. A recent affection of this kind, when not complicated with any other obstinate or serious malady, may be cured in the course of several weeks; but when the disease is confirmed, it will require a long time to effect a recovery, perhaps a year or two. In the advanced stages, when aphthous ulcerations appear upon the tongue, and inside of the lips, it is an unfavorable symptom, indicative of approaching dissolution. Chronic inflammation of the stomach usually terminates in ulceration of this organ, and occasionally in softening and gangrene.

TREATMENT. One of the most important points of treatment in chronic gastritis, is to regulate the patient's diet. While the more urgent inflammatory symptoms are present, Gum Arabic water, rice-water, barley-water, arrowroot, toast and tea, and other mild, unirritating, and easily digested articles of food may be allowed; but when these symptoms have subsided, and especially when debility is present, more substantial and nourishing diet should be permitted, as oysters, animal jellies, venison, poultry, tender beef-steaks, roasted, mealy potatoes, and other easily digested substances, and which will require to be changed or adapted to suit the stomach of the patient. Sometimes the patient will have a constant desire or craving for some article of food, not exactly in accordance with the views of the physician, but by granting a gradual and cautious use of it, permanent benefit will frequently follow. All solid food should be slowly and thoroughly masticated before it is allowed to pass into the stomach. Milk may be allowed to persons who are fond of it, except in case it is found to disagree with them, causing nausea, heartburn, sense of weight, increased heat, diarrhea, or other disagreeable symptoms. The meals should be regular, and in cases of great debility, it will be better to make several meals a day, eating only a small quantity at each; too much attention to this point cannot be observed.

If the strength of the patient will permit he should take gentle outdoor exercise, either by walking, riding, or sailing,—but no violent or long-continued exercise must be allowed. Cheerful company is always beneficial. The surface of the body should be bathed twice a day with a weak alkaline solution to which some spirits is added, and, in drying, considerable friction must be used. Mustard poultices, or other mild counter-irritants should be applied to the region of the stomach, and continued until all tenderness upon pressure is removed; and at the same time the shoulders should be kept back, so as not to allow the lower part of the breastbone or sternum to press upon the stomach. In this disease never exhibit medicines internally unless they are imperatively required, and then be very careful as to the character of the agents employed.

As an internal medicine I have derived much benefit from the Fluid Extract of Cubebs. The following mixture, though not a strictly chemical one, has proved decidedly beneficial in my hands, in the treatment of chronic gastritis:—Take of Fluid Extract of Cubebs one fluidounce, Mucilage of Gum Arabic two fluidounces, Essence of Lemon one fluidrachm, Lupulin, Trisnitrate of Bismuth, each, eight scruples; mix. The dose is a teaspoonful, to be repeated three or four times a day, shaking the mixture well, each time previous to administering it. In conjunction with this, an infusion of equal parts of Golden Seal and Solomon's Seal, may be administered in table-spoonful doses, repeated every hour or two.

If obstinate constipation is present, which cannot be removed by a proper diet and injections, it may become necessary to administer mild laxatives. But great care should be taken in the selection of the article, lest the symptoms be aggravated. I usually prefer Rhubarb in doses of from three to ten grains, or, in sufficient quantity to produce one gentle evacuation daily; the dose should be so apportioned that it may be repeated three times a day to produce the desired effect, and should acidity of stomach be present, half the quantity of Bicarbonate of Potassa may be added to each dose, or, the Bicarbonate of Soda.

Diarrhea may be overcome by the use of the following compound:—Take of Compound Syrup of Rhubarb and Potassa three fluidounces, Tincture of Prickly-Ash berries one fluidounce, Paregoric, four fluidrachms; mix. The dose is a teaspoonful every hour or two. While using this internally, the following injection may also be used:—Take of Tincture of Prickly-Ash berries four fluidounces, Saturated Tincture of Nux Vomica three fluidrachms; mix. Inject a teaspoonful of this, diluted with a teaspoonful of an infusion of Solomon's Seal, into the bowels, and repeat it three times a day; it should be retained in the bowels as long as possible. This injection will likewise be found very useful in those cases of diarrhea which occur whenever the patient sits up, and which are owing to excessive debility.

When troublesome cough is present, the following mixture will be found very valuable:—Take of Syrup of Wild Cherry bark, Syrup of Balsam Tolu, Syrup of Ipecacuanha, Tincture of Hyoseyamus, each, half a fluidounce; mix. The dose is half a teaspoonful, or a teaspoonful whenever the cough is harassing.

When this disease occurs in persons who have been in the habit of using liquors intemperately, it will frequently become necessary to resort to the use of ale, wine, or brandy, before any decided relief can be obtained. But these are not allowable in ordinary instances, except in cases of great debility, in which I have seen brandy taken several times a day without any appreciable bad effects, and without aggravating any of the symptoms; still, these stimulating liquors must be used with great caution, never permitting them unless their use is absolutely necessary and non-injurious. (*See Remedy for Drunkenness, Introduction, page 101.*)

Flatulency is frequently a very annoying symptom, and may be removed by the use of Essence of Anise, Essence of Peppermint, &c., given in a small quantity of sweetened water. I have derived much benefit in this symptom from the following mixture:—Take of Tincture of Prickly-Ash berries one fluidounce, Essence of Anise half a fluidounce, Dioscorein half a drachm; mix. Triturate the mixture until the Dioscorein is dissolved. The dose is half a teaspoonful in a teaspoonful of an infusion of Pleurisy root, and repeated according to the urgency of the case.

After the inflammatory symptoms have entirely disappeared, it will be well for the patient to continue the use of the above infusion of Golden Seal and

Solomon's Seal, for two or three subsequent weeks; or, an infusion of the bark of Shrubby Trefoil (*Ptelea Trifoliata*) may be taken in table-spoonful doses, repeated several times a day, and which will increase the tone and energy of the stomach. A gradual return to the ordinary food must be made, as in convalescence from the acute form of the disease.

INFLAMMATION OF THE BOWELS.

INFLAMMATION of the Bowels, or Enteritis, is the term applied to inflammation of the lining mucous membrane of the small intestines; when the large intestines are attacked, it is known as "Dysentery."

SYMPTOMS. Acute Enteritis commences with a slight chill or sense of coldness, and more or less uneasiness in the neighborhood of the bowels, with slight griping pains, which gradually increase until they become of a severe, burning character. The pain generally extends over the whole of the abdomen, but is more severe around the navel, and usually comes on in paroxysms, with intervals of more or less suffering. The pain is greatly aggravated on pressure over the affected part. Sometimes the pain is violent from the beginning; and, when the inflammation is confined solely to the mucous membrane, involving no other tissue, there will be no pain at all. Nausea and frequently vomiting are present, and the matters ejected are either bilious, or dark and fetid. There is more or less fever, hot and dry skin, dry, slightly furred, and red tongue, thirst, great anxiety, obstinate costiveness, painful, difficult, and scanty urination, the fluid being high-colored; the breathing is short and laborious, and the pulse small, hard and frequent, or, sometimes full and hard. Eructations of wind are constant, and in severe cases the motion of the intestines becomes inverted, and the patient discharges fecal matter by the mouth. The patient prefers to lie upon the back, with the legs flexed toward the abdomen, which lessens the compression of the abdominal muscles on the affected parts, as well as prevents pressure of the bedclothes. Not unfrequently, instead of costiveness, there will be a diarrhea, the discharges being either watery, or, mucus tinged with blood, and sometimes they will be of a greenish color, or, perhaps, bilious. Usually the bowels are flat and sunken, but in protracted cases from accumulations of gas, they may become more or less swollen and tympanitic. If the disease is not subdued, the patient is suddenly relieved from his agony, the pulse becomes intermittent and can hardly be felt, the countenance assumes a pale and livid hue, the extremities become cold, together with other symptoms of approaching dissolution, from mortification having occurred.

DISCRIMINATION. Enteritis may be mistaken for colic, or for peritoneal inflammation. It may be distinguished from colic by the quick, small, and hard pulse, the febrile symptoms, and the increased pain on pressure, all of which are absent in colic; in colic the pains have perfect and complete intermissions, and are relieved by pressure. It may be determined from peritoneal inflammation by observing that diarrhea is rarely present in this latter affection; tympanitic tension of the abdomen with soreness on pressure are always present in peritonitis, and are more severe than when they happen in enteritis. The pulse is also much more rapid in peritonitis, and the pain more intense.

CAUSES. Enteritis may be caused by the same means that produce gastritis; acrid or irritating substances, hardened feces, acrid bile, obstinate constipation, spasmodic colic, strangulation of any portion of the intestines, &c., frequently occasion it. But the most common cause is cold, or sudden

exposures to variable temperature, atmospheric changes, or from cold drink taken when the body is heated by exercise. It may also be occasioned by the sudden recession of cutaneous or exanthematous eruptions, translated gout or rheumatism, and the suppression of customary discharges.

PROGNOSIS. This affection is not commonly severe, and is apt to terminate favorably; sometimes, however, it is attended with great danger, and may terminate in gangrene in a few hours. Gangrene or mortification may be known by a sudden cessation from pain, weak and irregular pulse, sinking of the features, cold sweats, fainting, hiccough, suppressed urine, and a tympanitic distension of the belly. When there is no great amount of pain, no fever, little or no diarrhea, the case is favorable. If, in the severe form, the pain gradually abates, the stools become natural, a moisture covers the whole surface of the body, the urine passes freely, with a more natural pulse, the case will terminate favorably by resolution.

TREATMENT. This will be similar to that recommended for gastritis, depending, however, on the cause of the attack. When it is caused by cold or exposure, the whole surface of the body should be bathed with a warm, weak alkaline solution, after which Mustard poultices should be applied over the bowels, soles of the feet, and along the whole course of the spinal column, and continued until they produce considerable redness; and, if necessary, these may be repeated daily. After removing the Mustard from over the bowels, a hot fomentation of Hops and Tansy, or Hops and Stramonium leaves, should be applied, renewing them every half-hour or hour, according to the intensity of the pain. The feet and legs should also be kept warm by hot rocks, or bottles of hot water, &c. In conjunction with these measures, the Compound Tincture of Virginia Snakeroot, may be administered in some warm infusion of Balm or Catnip, giving it in fluidrachm doses, and repeating it every hour or two, until free and copious perspiration is produced, which should be kept up for two or three hours. When the Spirit vapor bath can be used, it will answer the purpose, without a necessity for giving the above tincture. The same course may be pursued when the disease is owing to translated gout, or rheumatism, or to a recession of an eruptive affection from the surface. When a malarial fever is present this should be first arrested, by the means already named under Intermittent, and Bilious Remittent fevers; and if the inflammation should continue, treat it as just named above.

As an internal agent, I have recently succeeded in promptly subduing the disease, when from cold, by the following;—Take of Tincture of Gelseminum four fluidrachms, Tincture of Aconite root ten or twenty drops; mix. Give half a teaspoonful every fifteen or twenty minutes until the effects of the Gelseminum are manifested, when the intervals between the doses may be increased. At the same time, the above local measures, Mustard, hot fomentations, &c., should not be omitted.

When the inflammation is owing to acrid or irritating substances in the intestines, the lower bowels must be freely evacuated by means of stimulating cathartic injections; after which the Compound Powder of Rhubarb and Potassa should be given in half teaspoonful doses, in some sweetened water, and repeated every hour until a free evacuation from the bowels have been obtained; and, in the meantime, hot fomentations must be applied to the abdomen, or, cloths wet with hot water may be placed over the bowels, renewing them every five or ten minutes, until relief is obtained. Should any mild inflammation remain, it may be removed by mucilaginous drinks, as infusion of Elm and Peach leaves, Marshmallow, &c.; adding a small portion of Laudanum should diarrhea be present.

When the disease is owing to excessive bile, of an acrid quality, an infusion of a mixture of the root of *Leptandra Virginica* two parts, *Rhubarb* one part, may be given in table-spoonful doses every hour, until bilious evacuations are obtained; and, in some instances, much benefit will be derived from the use of acids, as lemonade, orange-juice, tamarind-water, &c., especially when the fur on the tongue is yellowish or dark-brown. If diarrhea be present, equal parts of *Paregoric* and the Tincture of *Catechu*, may be given in teaspoonful doses, as often as required; and an injection should be frequently used, composed of five or six grains of *Tannic Acid*, in a fluidrachm, each, of Tincture of *Prickly-Ash* berries, and Infusion of *Elm*.

When the inflammation is due to strangulation of the intestine, this must first be overcome, if possible. It is a very difficult condition, which frequently baffles the best medical skill. It has been reduced, in some cases, by passing the tube of a stomach-pump into the rectum, as far up as practicable, and then filling the bowels with water. It has likewise been overcome by placing a large glass vessel upon the abdomen, and producing a partial vacuum in it by means of an air-pump, or otherwise.

With regard to diet, and the management of convalescence, the rules laid down under *Acute Inflammation of the Stomach*, must be followed.

CHRONIC INFLAMMATION OF THE INTESTINES.

CHRONIC Inflammation of the Intestines, or *Chronic Enteritis*, is one of the most troublesome diseases that afflict man. It may follow the acute form, but more frequently it is produced by an improper treatment of bilious and other fevers, the use of drastic cathartics, &c. Many of our soldiers in the late war with Mexico suffered with it, under the name of "Mexican diarrhea," and it proved fatal to a great number.

SYMPTOMS. The most constant and formidable symptom attending this disease, is an obstinate diarrhea; the evacuations being of a dirty, slimy, watery character, varying very much in quantity, as well as in frequency. Generally, there are from two to four stools a day, and of a feculent, bloody, or mucous character. The tip and edges of the tongue are vividly red, and frequently the whole tongue and mouth; sometimes, the body of the tongue will be paler than natural, with a slight coat, and perhaps aphthous ulcerations. There is a dull pain in the region of the affected part, increased by pressure, by jolts, and by eating a full meal, as in many instances, the pain will be more sensible at a certain period after eating. The abdomen is sometimes distended, at others, flat and concave; the skin dry and husky; the extremities cold; the appetite more or less impaired; considerable thirst; deficient and high-colored urine; great depression of spirits; small and frequent pulse, and emaciation. In some instances, the only symptoms complained of, are debility, emaciation, and diarrhea. Sometimes the lungs become implicated, giving rise to a harassing cough.

TREATMENT. Among the returned soldiers from Mexico, I had numerous opportunities of witnessing and treating the disease, and found that course which I am about to recommend, more efficacious than any other. In the more active stage of the disease, I, at first, adopted a treatment similar to that named under *Chronic Inflammation of the Stomach*; as soon as these were subdued, the Compound Syrup of *Rhubarb* and *Potassa*, was given in table-spoonful doses, every two or three hours, or in doses sufficient to act as a mild laxative; at the same time the patient was made to take a table-spoon-

ful every hour during the day, of an infusion of equal parts of Solomon's Seal, Wild Cherry bark, and Geranium. In addition to these means, the Compound Tar Plaster was sometimes applied over the whole abdomen, and kept discharging for three or four weeks, as the patient could bear it. This plaster, however, is to be used in those cases only which stubbornly resist the other measures; as a general rule, its application will not be required, as the disease can be cured without it.

When the disease obstinately resisted these measures, or the diarrhea returned, shortly after an apparent cure, I administered the following pill, for the purpose of removing the tubercular condition which is almost always present in this affection, as well as to restrain, but not completely arrest, the looseness of the bowels:—Take of Iodine eight grains, Sulphate of Morphia two grains, Geraniin thirty-two grains. Triturate these articles thoroughly together, form them into a pill mass with Simple Syrup, or Extract of Liquorice, and divide into thirty-two pills. The dose is one pill, to be repeated every three hours, or four times a day. The diet must be simple, nutritious, and easily digestible, avoiding animal food, butter, milk, acids, grease, stimulants, and all liquors. Moderate exercise to be taken daily in the open air, whenever the strength of the patient would permit. If it became necessary, in obstinate cases, to re-apply the Compound Tar Plaster, I usually placed it over the spine, so as to cover the ninth, tenth, and eleventh dorsal vertebræ.

Occasionally, I met with much success from a powder composed of Geraniin, Hydrastin, each, thirty grains, Strychnia half a grain; triturate the powders thoroughly together, and divide into thirty powders, of which one was a dose, to be repeated three times a day; carefully observing the influence of the Strychnia, and omitting it when its action was felt in the least appreciable degree—but returning to its use again after several days, and thus alternating its employment.

In cases of extreme debility and emaciation, considerable advantage has been derived from the use of a syrup made from equal parts of Black Cohosh root, Golden Seal, Solomon's Seal, and Geranium, to every pint of which, half an ounce of Iodide of Potassium was added. The dose is from one to three fluidrachms two, three, or four times a day.

DYSENTERY, OR COLO-RECTITIS.

THIS disease, likewise known by the names of *colitis*, *bloody-flux*, &c., is an inflammation of the mucous lining membrane of the lower, or larger intestines, and is divided into two forms, viz: acute and chronic. Most persons consider diarrhea and dysentery to be the same disease, but there is a material difference between the two.

SYMPTOMS. Acute dysentery may present itself without any previous constitutional disturbance, but generally it comes on with loss of appetite, constipation, flatulence, and nausea, which are followed by shivering, lassitude, uneasiness, heat of the surface, and frequent pulse. These premonitory symptoms are succeeded by more or less frequent discharges from the bowels, accompanied at first with a sensation of uneasiness, but which, as the disease progresses, becomes changed to a soreness and weight in the lower portion of the intestines; every evacuation is preceded by severe griping pains, with a rumbling noise, owing to the unusual quantity of gas in the bowels; and a very distressing tenesmus, or constant desire to stool, with bearing down of the parts, is experienced after each discharge, which

frequently occasions the patient to make efforts to evacuate the bowels, without being able to pass any thing, or only a small amount of bloody mucus. The discharges at first have scarcely any odor, but as the disease advances, they acquire a peculiar offensiveness; they likewise vary both in color and consistence; sometimes being pure mucus, at others mucus streaked with blood, and not unfrequently pure blood will be voided. In some instances, and especially when the disease is epidemic, a fetid, acrid, watery liquid is passed, resembling the washings of fresh meat. Again, pus will be passed in an advanced stage. It is very seldom that any natural feces are observed in the discharges, but when they are present, they are in small hard balls, called "scybalæ," and occasion much pain, but when passed, they always afford some relief from the griping and tenesmus. The number of discharges per day, varies from fifteen to a hundred or more, and they always occasion more or less severe burning sensation in the rectum. Conjoined with these symptoms, the tongue may be moist and covered with a whitish substance; or, if the liver is implicated, the coat will be yellowish, and sometimes, in severe cases, the edges and tip of the tongue as well as its whole surface, will present a fiery-red appearance. The pulse generally hard and accelerated at first, becomes changed to natural, or feeble and irregular, according to the favorable or unfavorable character of the disease. The urine is commonly deficient and high-colored, and sometimes passed with pain and difficulty; the liver is almost always deranged; and sometimes nausea and vomiting are present.

CAUSES. Acute dysentery may be produced by exposure to cold and dampness, by the presence of acrid and indigestible substances in the bowels, as crude, indigestible vegetables of any kind; but I do not believe it is ever occasioned by the moderate use of ripe fruits. It frequently occurs in places where the air is vitiated, the food insufficient, indigestible, or improperly prepared, and the laws of hygiene are disregarded, as in camps, hospitals, jails, ships, &c., in which cases, it most usually assumes a typhoid character. Drastic cathartics frequently occasion it. Excessive physical labor in hot and damp weather, or during an epidemic season, will be very likely to bring on an attack. And it more often occurs in this country in the form of an epidemic; but I do not consider it by any means a contagious disease, under any form. It most generally prevails in the summer and fall months of hot and damp seasons.

PROGNOSIS. Generally, dysentery is a disease easily cured; occasionally, it proves obstinate and fatal. The typhoid form is the most unfavorable. When the febrile symptoms are high, with excessive pains, great prostration of strength, emaciation, strangury, hiccough, aphthous ulcerations of the mouth and fauces, tense abdomen, weak, irregular pulse, cold, clammy sweats, and fetid and involuntary discharges, the case is unfavorable; but it is favorable, when a gentle moisture is developed over the surface, the fever, thirst, gripings, and tenesmus gradually ceasing, and the stools becoming of a natural color and consistence. Persons whose constitutions have been impaired by scrofula, or other tuberculous diseases, by severe attacks of intermittent fever, or other disorders, are very apt to fall under an attack, especially when severe.

TREATMENT. Before undertaking the treatment of dysentery, we must first ascertain its cause, if possible. Should it result from cold, or exposure to variable temperature, it will be proper to produce perspiration, for which purpose the Compound Tincture of Virginia Snakeroot will be found preferable to any other agent. If there be severe pain in the bowels, a hot fomentation of Hops, or Hops and Stramonium leaves may be placed over the

painful part, or it may be preceded by a Mustard poultice. When the discharges are frequent or painful, injections must be used; three parts of Starch-water and one of the Compound Tincture of Virginia Snakeroot, may be mixed together, and about half a fluidounce be injected into the rectum, and repeated after every discharge, the patient retaining it each time as long as he possibly can. If the above tincture cannot be obtained, ten or twenty drops of Laudanum may be substituted. As in all cases of dysentery, whatever its cause, the patient must be kept quiet and in a recumbent position as much as possible, and he should also be advised to resist, as much as possible, any desire to get up, because the erect position, as well as every evacuation, or straining, tends to aggravate the disease; and on this account it is always better to use a bedpan whenever an evacuation occurs. If after these means, a discharge should still continue, it will in most cases yield to the Compound Syrup of Rhubarb and Potassa, and the use of the above injections.

When dysentery is owing to acrid or irritating matters in the bowels, these should be first removed; for this purpose, the Compound Syrup of Rhubarb and Potassa may be given in table-spoonful doses, and repeated every hour, until a free action on the bowels is produced; or, a powder composed of half a grain of Podophyllin, two grains of Leptandrin, and two grains of Sugar of Milk, may be administered every three hours until free catharsis is produced. In connection with this, the local applications, as Mustard to the bowels, hot fomentations, and injections, as named above, must likewise be used. Mucilaginous drinks are always useful in dysentery, not only for the purpose of assuaging thirst, but because of their soothing effect upon the inflamed mucous membrane; an infusion of Elm bark, or Marshmallow root, may be drank freely, and, after the bowels have been evacuated by the medicine, an equal amount of the leaves of Raspberry may be added to either infusion.

When dysentery occurs as an epidemic, it will frequently vary in many of its features. In these cases, the bowels should first be acted upon by medicines, and the one found to be the most efficacious, is the following:—Take of Podophyllin two grains, Leptandrin eight grains, Quinia eight grains; mix. Divide into four powders, and administer one every three hours, or until a free operation is produced on the bowels. However, should there be great irritability of the system, connected with the disease, as will frequently be the case when it exists as an epidemic, the Podophyllin must be omitted, as it will be apt to aggravate the symptoms. The local measures, recommended above, as fomentations, injections, &c., should also be employed.

After the operation of the above preparation, in order to act upon the liver, produce moisture of the surface, restore tone to the intestines, prevent further discharges, and overcome the tendency to periodicity, the following may be given:—Take of Sulphate of Quinia eight grains, Sulphate of Morphia one grain, Powdered Ipecacuanha two grains; mix, and divide into eight powders, of which one powder may be administered every two or three hours, gradually lengthening the intervals between the doses, until three powders a day, only, are taken; and these should be exhibited daily for two or three days. But should the dysenteric discharges, tenesmus, and griping pains return, the above cathartic powders will have to be repeated, following them in the same manner as explained heretofore. Any great amount of debility caused by the purgative, may be readily overcome by the use of Brandy sling, burnt Brandy, or other grateful stimulant, given frequently, and in small quantity at a time. In the typhoid form,

two grains of Carbonate of Ammonia, one grain of Sulphate of Quinia, and half a grain of Camphor, mixed together for a dose, and repeated three or four times a day, will be found very useful as a stimulant and tonic.

Large injections should never be used in dysentery, because they tend to counteract the end aimed at, viz: to relieve tenesmus, allay inflammation, and check the discharges; and they should always be given immediately after each evacuation from the bowels, and retained as long as possible. When the disease has continued two or three days, a very excellent injection for the above purpose is composed of a cold infusion of Golden Seal one fluidounce, Laudanum ten to twenty drops. Or, a mixture of a solution of the Inspissated Juice of Poke berries one fluidounce, Tincture of Prickly-Ash berries one fluidrachm, may be injected, and repeated as required, especially in the typhoid form of the disease.

When the disease manifests a disposition to be obstinate, the dysenteric discharges being constant and fetid, with or without tenesmus, inability to retain anything on the stomach, or if retained, followed shortly after by a desire to stool, with much prostration,—in addition to the other treatment, the surface of the body and limbs should be bathed with an alkaline wash, warm or cold to suit the nature of the case and the patient's feelings, and which may be repeated two or three times a day; and Mustard poultices may be applied alternately over the bowels, and whole length of the spinal column. If the tongue be coated yellow, or brown, ripe fruits or their acid juices will prove very beneficial. Nausea, and excessive irritability of the stomach, when present, may be checked by an infusion of parched corn, or by an oatmeal coffee, made by forming the oatmeal into a cake with water, baking it, browning it similar to coffee, and then making a strong infusion of it. It is likewise nourishing, and must be used without milk and sugar. For thirst and nausea, pieces of ice may be held in the mouth or swallowed.

In dysentery from any cause, but more especially when it is epidemic, I have met with much success by the use of the *White Liquid Physic*, under the use of which recoveries have taken place where dissolution seemed inevitable. It may be safely and effectually used at any stage of the disease. The following has been recommended in dysentery, as an excellent course of treatment: Take of Camphor mixture eight fluidounces, Nitric Acid one fluidrachm, Laudanum two fluidrachms. Mix. The dose is half a teaspoonful every three hours. Rice-water only is to be taken as food, and the pain and tenesmus relieved by the injection named above. I have sometimes cured dysentery, by the administration of half a wineglass of the following mixture, repeated every four hours:—Take of *very finely powdered* Guaiacum five drachms, Mucilage of Gum Arabic, Simple Syrup, each, three fluidounces, water eight fluidounces. Mix.

The diet throughout the treatment must be very light and simple, as in the previous intestinal inflammations, and great care should be taken during convalescence to keep the bowels regular, use mild, non-stimulating food, and to avoid all exposures which may cause a return of the disease. Sometimes, worms in the intestinal canal cause so much irritation as to induce dysentery; they should be removed by proper worm medicines, and the cases then treated as heretofore advised.

CHRONIC DYSENTERY.

CHRONIC DYSENTERY is sometimes the result of an acute attack ; it may also take place from improper diet, exposures, checked perspiration, &c.; and it is at times met with as a complication of chronic enteritis, &c.

SYMPTOMS. The bowels are quite irritable with more or less looseness, the evacuations are unhealthy, the discharges amounting to from three to forty a day, are streaked more or less with blood, and attended with a bearing-down sensation or tenesmus. The skin is dry and parched, the countenance pallid, or sallow, and usually a bloating of the face ; the tongue is slightly furred ; the appetite capricious or lost ; the pulse frequent and weak, sometimes wiry ; the patient is very much debilitated and emaciated, and is often attacked with dropsy. The discharges may be light-colored and alternate with constipation ; or they may be small, consisting of blood-stained mucus ; again, they may occur with evacuations of fecal matter, &c. ; but, however they may appear, they are always more or less fetid. The disease if not relieved, ultimately destroys the constitution, and the patient finally sinks.

TREATMENT. The treatment which I have found best adapted to this disease, is similar to that recommended for the cure of Chronic Inflammation of the Bowels, which see on page 287. Using at the same time injections with some opiate to relieve the bearing-down sensations, the same as in acute dysentery.

Among the astringent preparations which have been found efficacious in chronic dysentery, are the following, which may be used in connection with the other treatment, when the discharges continue of an obstinate and unyielding character :—

1. Take of Rhubarb four ounces, Black Cohosh root, Wild Cherry bark, Geranium, each, two ounces ; coarsely powder them, and mix. Pour on the articles two pints of good French Brandy and two pints of water ; let the mixture stand for five or six days, frequently agitating it, then strain ; add four pints of water to the dregs, boil slowly to two pints, strain, add to the strained liquor the previous tincture, and sweeten with loaf sugar. The dose is a table-spoonful every one, two, or three hours.

2. Take of Beth root, Geranium, Blackberry root, Wild Cherry bark, Cinnamon, each, in powder, one ounce, good Brandy one pint and a half, water one pint and a half. Mix, and let the articles stand for several days, frequently agitating, when it will be fit for use ; it may be sweetened if desired. The dose is one or two teaspoonfuls every two or three hours.

3. Take of Raspberry leaves, Geranium, Blackberry root, Leptandra root, each, equal parts ; mix, and make three pints of strong decoction. The dose is a table-spoonful every hour.

Among the other astringents which have been found valuable in this disease, may be named Marsh Rosemary, or *Statice Caroliniana*, Rockbrake or *Pteris Atropurpurea*, Mouse-eared Chickweed or *Cerastrium Vulgatum*, and Alum root or *Heuchera Americana*.

The injections which should be used, may be composed of decoctions of one or more of the following articles,—Golden Seal, Solomon's Seal, Geranium, to which the Tincture of Prickly-Ash berries may be added, as in the preceding cases. When the discharges show evidence of ulceration, a solution of Nitrate of Silver, in the proportion of from ten to thirty grains of the nitrate to a fluidounce of water, should be injected into the rectum, and carried up as high as possible into the bowels by means of a long tube.

The diet is of great importance; it should be nutritious and easy of digestion, taken in moderate quantities, eaten slowly, and thoroughly masticated before allowing it to pass into the stomach. Very moderate exercise is allowable in some cases; but usually a state of quiet will be found of much more advantage toward facilitating a cure.

INFLAMMATION OF THE LIVER, OR HEPATITIS.

INFLAMMATION of the Liver, or Acute Hepatitis may be confined to the peritoneal covering of the liver, to the substance of the liver, or a part of it, or, it may involve the whole of these. The inflammation has been divided into two forms, *acute*, and *chronic*.

In diseases of the liver there is a great amount of ignorance displayed both by professional men and their patients, who not only attribute nearly every form of disease to an abnormal condition of this organ, but are impressed with the mistaken idea, that Blue Pill or Calomel only are the true remedies for its cure. The consequences of such views have been truly lamentable; for it is rarely that a patient thus treated has escaped without some permanent and harassing affliction. No preparation of mercury is required in the treatment of diseases of the liver.

SYMPTOMS. Acute inflammation of the liver commences with symptoms peculiar to other inflammatory attacks of the abdominal organs, as a sense of chilliness, followed by more or less general febrile excitement. These are soon succeeded by pain in the right side in the region of the liver, which varies in intensity, being more acute and lancinating when the peritoneal covering of the organ is affected, and much duller when the inflammation is confined to the substance of the liver. The pain may be fixed and seated, or it may shoot upward, extending to the breast, the collar-bone, and the right shoulder; it is also much aggravated on making pressure upon the affected part, during inspiration, or cough, and also when the patient lies upon his left side. The breathing is hurried, and more or less impeded, and a dry, short, frequent cough is usually present. When the stomach is implicated, obstinate nausea, and vomiting of bilious matter takes place; hiccough generally occurs during the course of the disease. The pulse is strong, hard, and frequent, sometimes intermitting; occasionally it is weak and small from the commencement. The tongue is coated with a yellowish, dark-brown, or even black substance, and will sometimes have its tip and edges very red, especially when the stomach is implicated; and there is frequently an unpleasant, bitter taste in the mouth. The bowels are almost always costive, but sometimes, and especially in warm climates, there will be a diarrhea, with griping and bilious or slimy discharges. The urine is scanty, and of a deep saffron color; the skin is hot and dry, and frequently the eyes and the skin become tinged of a deep yellow. Loss of appetite, great thirst, great depression of the mind, restlessness, and wakefulness, are usually present, and sometimes delirium. Generally, several of the symptoms just described, are present, varying, according to circumstances, in their degree of severity. Sometimes, the symptoms are so trifling as hardly to attract the patient's notice, as abscesses, probably the result of previous inflammation, have been found upon dissection, in the liver, and which occasioned no inconvenience during the person's life-time.

Inflammation of the liver usually terminates in resolution, which is often announced by a bleeding from the nose, by profuse perspiration, by more

or less copious discharge of mucus from the lungs, by bilious discharges from the bowels, or by an abundant flow of deep-colored urine giving a red, or whitish deposit on standing. It may also terminate in suppuration, or the formation of an abscess which is the more unfavorable as it is more deeply situated in the substance of the liver, and the favorable character of which likewise depends upon the direction in which the abscess is discharged; thus, if the matter is evacuated into the respiratory passages, or into the bowels, the case is much more serious, than when the abscess is seated on the external surface of the liver, which may be known by the presence of swelling, giving a sense of fluctuation to the touch, and which is located on the right side, immediately below the ribs; and in this case, the matter may be discharged externally by making an incision into the swelling, thus saving the patient in most cases.

When an abscess is formed, the pain ceases, and the patient experiences a sense of weight, with throbbing, the first of which is aggravated by lying on the left side; there will also be frequent shiverings, and ultimately symptoms of hectic fever. Adhesions not unfrequently take place between the liver and the neighboring organs. Sometimes acute hepatitis terminates in enlargement and induration of the liver; and very rarely, in gangrene. When the febrile symptoms gradually abate, the pulse lessening in rapidity, the system becoming more calm, the complexion more natural, the extremities being warm, with a gentle perspiration on the body, and a gradual return of the appetite, the *prognosis* is favorable. But it is unfavorable, when the pain is intense and obstinate, the pulse continuing full and frequent with dryness of the skin, thirst, and costiveness; and still more so, when the extremities become cold, the patient very restless, the pulse frequent, and the urine very deficient.

CAUSES. Acute hepatitis may be occasioned by numerous circumstances. Cold is the most common cause, in whatever manner it may be contracted; it may also result from injuries to, or blows over, the organ, high living, intemperance, violent mental passions, suppression of habitual discharges, violent exercise, intense summer heat, and other causes which are capable of producing inflammation. In miasmatic countries it is always more or less complicated with the influences peculiar to such places, and known as "malarial." Adults are more liable to the disease than children.

DISCRIMINATION. Acute hepatitis may be determined from *pleurisy*, by the yellow appearance of the skin in the former; by the breathing being effected in hepatitis, chiefly by the muscles of the chest—and in pleurisy, by those of the abdomen. In pleurisy a greater degree of pain follows a full inspiration, and the accompanying cough is more violent and harassing. It may be determined from *inflammation of the lungs* by the breathing being effected with greater difficulty in the latter, as well as by the presence of more frequent and severe cough. In both pleurisy and pneumonia, the skin is more natural, with a redness of the cheek not present in hepatitis, and the breathing is effected chiefly by the muscles of the abdomen; pressure over the region of the liver produces no pain in these two diseases, but is always a constant symptom of hepatitis. Bloody expectoration is not present in hepatitis, unless complicated with one of the above maladies.

Hepatitis may be known from *inflammation of the stomach*, by the burning sensation accompanying the pain in the latter, as well as by the small, tense pulse, the great prostration, and the immediate vomiting of warm fluids when swallowed; in hepatitis, the pulse is full and strong, the prostration is not so excessive, and warm fluids are retained upon the stomach. In *spasm of the gall duct*, the skin is almost natural, and the pain intermits; in hepa-

titis the skin is considerably above the natural temperature of the body, is quite dry, and the pain is constant.

TREATMENT. In all cases, at the commencement of the disease, and if the strength and condition of the patient will allow, the Spirit vapor bath should be used, causing the patient to perspire freely; after which it should be kept up four or five hours by means of coverlets, warm drinks, &c. This will always afford prompt relief, and in mild cases will subdue the inflammation at once. But if the attack be violent, and the pain, though relieved by the perspiration, still continues with some severity, an emetic should be administered soon after the vapor bath has been taken, and while the patient is perspiring; either the Compound Powder of Lobelia, or, the Compound Acetated Tincture of Bloodroot, will be found valuable for this purpose, and whichever is used, must be administered until free vomiting is produced. In about an hour or two after the vomiting, it will be proper to give a cathartic, for the purpose of removing any accumulations in the bowels, as well as to relieve the congested condition of the liver. A full dose of the Compound Powder of Jalap may now be exhibited, or, the combination of Podophyllin and Leptandrin, one grain of the former to two grains of the latter, may be given as a dose, and repeated every two or three hours until free evacuations are produced.

To relieve the pain and distress in the side, as well as to aid in subduing the inflammation, Mustard poultices should be applied over the seat of the disease, and along the whole course of the spinal column, and be allowed to remain until considerable redness is produced. After removing the poultice from the region of the liver, fomentations of Hops and Boneset, or, Hops and Wormwood, or, Stramonium leaves, should be applied as hot as can be borne, renewing them every twenty or thirty minutes, or according to the violence of the pain and inflammation. And this course may be repeated on the next day, should the disease prove obstinate, and violent pain and inflammation still continue, or, daily, as long as the acute symptoms remain.

After the perspiration caused by the Spirit vapor bath has considerably diminished, it will be requisite to maintain a gentle moisture of the surface while the inflammation lasts; to effect which, the body and limbs should be bathed with a warm, weak alkaline solution, and rubbed off dry with a coarse towel, and this should be repeated whenever the inflammatory symptoms increase, or when the skin becomes hot with a tendency to dryness. In addition to this, hot bricks, or bottles of hot water, should be kept to the feet; and either of the following powders may be administered internally for the purpose of keeping up moderate perspiration:

1. Take of Pleurisy root, Boneset, each, in powder, four ounces; Bloodroot, Nitre, each, three drachms; mix. The dose is from ten to fifteen grains, every three hours.

2. Take of Pleurisy root, Bloodroot, Ipecacuanha, Nitre, each, in powder, one drachm; mix. The dose is the same as the preceding.

3. Take of Leptandrin two drachms, Ipecacuanha, Camphor, Nitre, each, half a drachm; mix. The dose is from three to six grains every hour or two. Either of these diaphoretic powders may be given in some warm infusion of Balm, Catnip, Spearmint, &c., or in some acidulated syrup.

In cases where the inflammation runs high, with scanty and high-colored urine, diuretics will be found very useful, as an infusion of Hair-cap Moss, or, of Cleavers, or, of Marshmallow root, &c.

The disease will frequently be so mild, that nauseants, aperients, diaphoretics, and rubefacients, will effect a cure without the use of emetics and active cathartics. Opiates are not proper in acute hepatitis, as they check

the secretions of the liver, and aggravate the congested state of its vessels. In cases connected with malarial influences, some one of the agents in which Sulphate of Quinia enters, named under Intermittent Fever, should be administered. And toward the termination of the disease, should there be any great debility, or other unpleasant symptoms, treat the same as mentioned in previous diseases, by tonics, stimulants, &c., according to the circumstances.

The diet should consist of rice-water, gruel, toast-water, &c.; and during convalescence, which is generally slow, the nourishment may be gradually increased, exhibiting mild tonics when indicated. Should an abscess form, the patient must be supported by generous measures, as wine, ale, porter, oysters, soft-boiled eggs, &c. Two ounces of Red Peruvian bark, and one ounce of Chamomile Flowers, may be placed in a quart of good Port wine, and after it has stood for three or four days, it may be administered to the patient in doses of half a wineglassful, or more, repeated three or four times a day, and will be found a valuable tonic.

CHRONIC DISEASE OF THE LIVER.

CHRONIC Disease of the Liver, or Chronic Hepatitis, is one of the most common forms of chronic disease with which we meet, especially in warm and temperate climates. In some sections of country it is looked upon as an incurable affection, but I am satisfied from my own experience in its treatment, that it is absolutely under the control of proper remedial agents, and can be permanently and effectually cured.

SYMPTOMS. The symptoms of chronic disease of the liver are numerous, and vary very much in different individuals, according to the extent and character of the disease, and its complications. Among the symptoms more commonly met with are the following: a dull pain in the right side, which frequently extends even to the shoulder blades, and pit of the stomach; more or less tenderness on pressure over the region of the liver, and not unfrequently an enlargement of this organ; at times a sense of uneasiness and tightness in the neighborhood of the stomach and liver; dry, harsh, and sallow skin; yellowness of the eyes; bowels irregular, generally disposed to looseness; irregular appetite; a slight hacking or dry cough; shortness of breathing, and sometimes asthmatic symptoms; feet and hands generally cold; tongue coated white, but frequently brown or yellow toward its root; at times a bitter and disagreeable taste is experienced; the urine varies in character, being scanty or copious, but generally of a high color, and often unnaturally hot, or scalding, and depositing a sediment on standing; and piles. There is more or less depression of spirits, despondency, or capriciousness, irritability of temper, and peevishness.

It is often the case that the skin may present an unnatural greasy appearance; or, yellowish and scaly, or branny eruptions, or pimples and blotches, will be developed on the face and neck; and sometimes there will be a troublesome itching of the skin. Dyspeptic symptoms are most commonly present, as impaired or capricious appetite; flatulency; acidity of stomach, and acid eructations; heartburn; fulness and distress at the stomach; palpitation of the heart; disturbed sleep; nightmare; disinclination to mental or bodily exertion; and, indeed, a host of symptoms to which the term "nervous" has been applied. In nearly every case of chronic hepatitis, several of the above symptoms may be found existing together, but varying according to the peculiarity of the case. When the disease has been of long continuance, there

will be an increase in the violence of the ordinary symptoms, with great emaciation, night-sweats, and a prostrating diarrhea. The disease may terminate in chronic enlargement and induration of the liver; atrophy of the liver; tuberculated liver; dropsy of the abdomen, or general dropsy; hemorrhages from the stomach or bowels, &c.

CAUSES. Chronic disease of the liver may be the result of the acute form, but more generally it arises from other causes; as repeated attacks of cold; sedentary and inactive habits; irritations produced in the neighborhood of the organ; improper diet; drastic cathartics; intemperate use of intoxicating liquors; excesses of all kinds; use of mercury as a medicine; and deficient amount of sleep. In hot countries the long-continued influence of malaria, is an important agent in developing the disease.

PROGNOSIS. Chronic Hepatitis is a disease which, when treated in season, can always be cured by proper means, but as with all other chronic affections, it cannot be cured rapidly—it requires time. And it should be borne in mind by every patient, that in the treatment of chronic diseases, perseverance is absolutely necessary, because, it is rarely, indeed, that quick cures are made by the most skilful physicians. The fact that acute maladies run their course rapidly and must be promptly checked lest they prove fatal, has been a great stumbling-block in the way of both physicians and patients in the treatment of chronic affections; and more injury has been effected, and more disease fastened permanently upon invalids by endeavors to make immediate cures of this class of diseases, than by almost anything else. Time and patience, together with proper remedies, are always required in the medication of chronic diseases.

TREATMENT. It is usually the case that physicians commence the treatment of this disease by the administration of an emetic, followed by an active purgative. This I never do, unless the liver is very torpid, or when there are symptoms of decided inflammation present. Then I prefer the Compound Powder of Lobelia as the emetic, and either the Compound Pills of Podophyllin, the Compound Pills of Leptandrin, or the Compound Powder of Leptandrin, as the cholagogue cathartic. Ordinarily, however, the following course of treatment will be found effectual:—Keep the bowels regular every day, so that one and not more than two evacuations will be produced, approaching as nearly as possible in character and consistence to the healthy discharges. And this may be accomplished by the administration of one of the above-named compounds of Podophyllin and Leptandrin, in just sufficient quantity every night to produce the desired result. Should there be acidity of the stomach, this must always be removed, by the use of small quantities of Saleratus, or Carbonate of Soda, or by Magnesia; and in many instances, prepared Charcoal in teaspoonful doses, repeated three times a day, will be found very efficient.

During the day, alteratives must be used, and as there are many very valuable ones, I will name several of them, any one of which may be taken with benefit:—

1. Take of the Compound Syrup of Stillingia one pint, Tincture of Black Cohosh two fluidounces, Iodide of Potassium four drachms; mix. The dose is a teaspoonful three times a day in a wineglassful of water.

2. Take of the Compound Syrup of Sarsaparilla eight fluidounces, Tincture of Bloodroot two fluidounces, Tincture of Sheep Laurel leaves one fluidounce; mix. Dose same as the above.

3. Take of the Tincture of Black Cohosh, Tincture of the Bark of Bittersweet root, each two fluidounces, Tincture of Bloodroot one fluidounce, Tincture of Sheep Laurel leaves half a fluidounce; mix. The dose is from ten to thirty drops three times a day in a little sweetened water.

In addition to these measures, it will frequently become necessary to make use of diuretics to render the urine free, and remove its high color and unnatural heat, and for this purpose, an infusion of two parts of Marshmallow roots, and one of Spearmint leaves, may be drank freely. Other diuretics, however, may be used, principally those of a stimulating character, as Queen of the Meadow root, Wild Carrot, Wintergreen, &c. The Compound Tincture of Tamarac has been used by many physicians in liver complaints, as a tonic, alterative, laxative, and diuretic, and has in several instances effected cures; the only associated measures being attention to the skin, the diet, and exercise.

The skin must likewise be kept in a healthy condition, to effect which, the body and limbs should be bathed every day or two with a warm, weak ley water, and in drying, a coarse towel should be used with considerable friction; a Spirit vapor bath should also be taken every week or two. This course will soften the skin, regulate its action, and eventually produce a healthy condition of it. These measures must by no means be omitted, as there is an intimate sympathy between the skin and the liver.

When symptoms of dyspepsia are present, they must be managed according to the plan advised under the treatment of dyspepsia.

In obstinate and unyielding cases, the Compound Tar plaster placed over the region of the liver, and used intermittingly will be found very serviceable; but this painful measure should not be adopted until we are positively satisfied that the ordinary means afford but little or no benefit.

When the liver is enlarged as a consequence of long-continued intermittents, the following preparation will prove very useful, in conjunction with the above cholagogue agents:—Take of Muriate of Ammonia two drachms, distilled or rain water one fluidounce; dissolve the Ammonia, and then add of Tincture of Poison Hemlock five drachms; of this, from half a teaspoonful to a teaspoonful may be taken three times a day. The parts over the region of the liver may likewise be bathed two or three times a day, with the same.

The diet of the patient must be nourishing but easy of digestion, avoiding tea, coffee, milk, alcoholic stimulants, acids, and all fats—the food should be taken in moderate quantities at a time, and always be thoroughly masticated before swallowing it. I have named milk as an injurious article, and it will be found so, among by far the greater number of cases; yet, when it does not disagree, it may be used. Acids are likewise objected to from a similar cause, but often ripe fruits, and dried fruits stewed will be found serviceable; these points must be determined by actual trial. Moderate exercise, regularly taken in the open air, should always be had when the weather will permit; otherwise, it must be pursued within doors. Cold, damp, sudden exposures and malarial influences are important causes of relapse, to be carefully avoided as much as possible. Pure water is the best drink for the patient, or water very slightly acidulated with Nitro-Muriatic acid.

For certain conditions associated with chronic disease of the liver, see *Jaundice* and *Gall Stones*.

INFLAMMATION OF THE SPLEEN.

Acute inflammation of the Spleen, or Splenitis may attack the peritoneal covering of the spleen, the proper structure of the organ, or, both of these together. It is a disease not met with very frequently, and is often associated with some febrile complaint.

SYMPTOMS. The disease is generally ushered in with chills, which are soon followed by heat, thirst, and other febrile symptoms. Pain in the left side, in the region of the spleen, is a prominent symptom, with much tenderness on pressure; when the pain is dull and obtuse, the proper structure of the spleen is affected; and when it is severe and cutting, with high inflammatory symptoms, the peritoneal covering of the organ is more particularly involved. The pain frequently extends through the whole abdominal region, or shoots through the diaphragm, and into the left shoulder. A dry cough is sometimes present, which aggravates the pain; a deep inspiration, or lying upon the affected side, will also be found to increase the pain, as well as when any attempt is made to turn over. In some instances the affected side becomes greatly enlarged. The skin is hot, dry, and harsh; the tongue coated white, or when the liver is involved, as, is frequently the case, it is yellow or dark; the pulse is much accelerated; the various functions of the body are more or less deranged; nausea and vomiting are frequently present, the matters ejected being sometimes a green bilious substance, at others a dark, clotted blood. The bowels are usually constipated, but occasionally a diarrhea comes on, the discharges being colored by black blood. Urine scanty, voided with difficulty, and high-colored. Sometimes there is lassitude, loss of strength, wakefulness and even delirium; at other times there will be faintings, and bleeding from the nose. Acute Splenitis may terminate in resolution, enlargement of the organ, or suppuration.

CAUSES. External violence, suppression of habitual discharges, depressing emotions, violent muscular efforts, and the same causes that originate other inflammatory affections may occasion splenitis. But in this country, it is so almost universally associated with malarial fevers, that it is generally believed to be, in a great measure, owing to the same influences that develop these fevers. Inflammation of the spleen seldom proves immediately fatal.

TREATMENT. This will be similar to that recommended under Acute Hepatitis, using the Spirit vapor bath, emetic, and cathartic, in the manner described; applying the sinapisms and hot fomentations over the left side, and attending to the surface by bathings, &c. And in all cases, it will be proper to use Sulphate of Quinia in some one of the forms named under Intermittent Fever, which will be found to exert a prompt and marked influence on the disease; and the best period for the administration of this anti-periodic is, when there is a remission, or intermission. Diet, and other measures, to be the same as in Acute Inflammation of the Liver.

CHRONIC DISEASE OF THE SPLEEN.

CHRONIC Disease of the Spleen, or Chronic Splenitis, is a very common affection in miasmatic districts, and is a difficult disease to cure, nearly, if not quite as much so as tubercular consumption, more especially when the organ has become enlarged to any considerable extent. It is not usually immediately fatal, but continues for a number of years, constantly harassing the patient, and ultimately terminating in dropsy; occasionally, instances are met with in which a simple enlargement of the spleen has continued for years without any great inconvenience to the patient.

SYMPTOMS. The symptoms of Chronic Splenitis are frequently very obscure, especially at its commencement. More commonly a sensation of uneasiness, weight, or tension in the left side is complained of, or perhaps a pain; and sometimes no pain or soreness is experienced until pressure is

made over the affected organ. Obstinate constipation, a blue tinge of the white of the eyes, and occasional chilly sensations, are most generally present. As the organ enlarges, it can be detected by passing the hand over the left side with some degree of pressure, and the name of "ague cake" has been given to it, which enlargement may be so great as to occupy all the front part of the abdomen; and as it increases, a variety of symptoms are developed, among which are debility of the lower limbs, with coldness and numbness, difficulty in breathing, palpitation of the heart, emaciation, periodical pains and difficulties, periodic pain of the head, inability to take much exercise, nightmare, ejection of food from the stomach, piles, irregular action of the kidneys, a sense of tightness or constriction around the chest, variable appetite, dry skin, irregular pulse, scanty urine, tongue coated white, sometimes red, more or less despondency, and frequently thoughts of suicide, which are sometimes acted upon, partial impotency, dropsical affections, and in females, painful menstruation and sterility. All these symptoms will not be developed in any one case, but several of them will almost invariably be met with. In the advanced stages of the disease, the patient becomes greatly emaciated and much debilitated, the countenance grows darker, the appetite fails, and the disease will terminate in hectic fever, diarrhea, vomitings of blood, dropsy, or abscess.

In the early stage of this disease, patients are sometimes periodically attacked with uneasy sensations, prostration of strength, inability to exercise of any kind, constipation, &c., for which they call in the aid of a physician, but as they usually present no very unhealthy appearance, nor any alarming symptoms, are able to eat with an appetite most of the time, are suddenly revived by excitement, &c., they unfortunately receive no sympathy from those around them, who look upon them as "spleeny," or, as "lazy, good for nothing fellows," or, as "being touched with hypo."

CAUSES. Chronic Disease of the Spleen may be occasioned by the same causes that give rise to chronic liver affections; but it more generally results from repeated attacks, or the long-continued action of malarial fevers, as intermittents, remittents, &c.

TREATMENT. As with other chronic affections, no rapid cure can be made in this; patience and perseverance are especially required in its treatment, together with a rigid attention to the rules of hygiene. The medicinal course laid down for the treatment of Chronic Disease of the Liver, may be pursued in this, and will be found beneficial. When the spleen is extremely enlarged, currents of electro-magnetism passed through it, once or twice a day, and persisted in for a long time, in addition to the other remedial measures, will be found very useful; in some instances, the Compound Tar Plaster, applied over the region of the enlarged organ, will prove an important measure in the treatment. The discharge produced by it should be kept up intermittingly, until the affection is subdued.

One drachm of common Salt taken for a dose, and repeated three times a day, for a long time, has effected cures in some cases of chronic splenitis. The Bromide of Potassium, in doses of three grains, repeated thrice daily, gradually increasing the dose, has been highly spoken of as a remedy. The inner bark of the White Ash, (*Fraxinus acuminata*) boiled in White Wine, and used in wineglassful doses, three or four times a day, has likewise been very highly recommended in "ague cake."

The obstinate constipation common to chronic affections of the spleen, should never be treated by cathartics. When active cathartics are used, they usually leave the patient more obstinately costive than before, requiring, in most cases, larger doses of purgatives to produce an action. If

the means named under Liver Complaint will not keep up a regular condition of the bowels daily, the following may be used: Take of Podophyllin four grains, Sulphate of Quinia eight grains, Alcoholic Extract of Nux Vomica two grains; mix the articles thoroughly together, and divide into sixteen powders; or, they may be made into a pill mass, by the addition of a sufficient quantity of the Alcoholic Extract of Black Cohosh, and divided into sixteen pills. The dose is one, two, or three of these pills, or powders, according to their influence, to be taken at bedtime. The Compound Tincture of Tamarac has been used with advantage in this disease, as a tonic, laxative, alterative, and diuretic.

When the countenance of the patient is pale and sallow, much benefit will be derived from the Tincture of the Muriate of Iron, which may be given in doses of ten drops in a wineglassful of water, and repeated three or four times a day. Dropsical affections will require a similar treatment to that named under the several varieties of dropsy.

INFLAMMATION OF THE KIDNEYS.

ACUTE Inflammation of the Kidneys, or Acute Nephritis, may be located in the structure of the kidney, or in its lining membrane, but more commonly both are implicated. One kidney may be affected, while the other remains healthy; and from sympathy, the bladder, testicles, and other parts of the urinary organs may become affected.

SYMPTOMS. The disease is usually preceded by chilly sensations and febrile symptoms, as in other inflammatory attacks; these are followed by a deep-seated pain about the loins, in the region of the kidney affected, which pain is aggravated by firm pressure, by jolts, and by moving about. The pain frequently shoots downward to the groin, with a numbness of the thigh of the affected side, with pain and a drawing up of the testicle of the same side. The pain is diminished by curving the body forwards; it is sometimes obtuse or dull, but more commonly it is acute, pungent, and darting downward. There is a frequent desire to pass urine, and the effort is attended with much pain and difficulty. The skin is hot and dry; the pulse hard and frequent; the tongue furred yellow; more or less nausea, and often vomiting of bilious matter; the bowels constipated; and the patient lies with the most ease on the affected side. When both kidneys are affected, there may be a suppression of urine, with stupor or comatose symptoms, terminating rapidly in death.

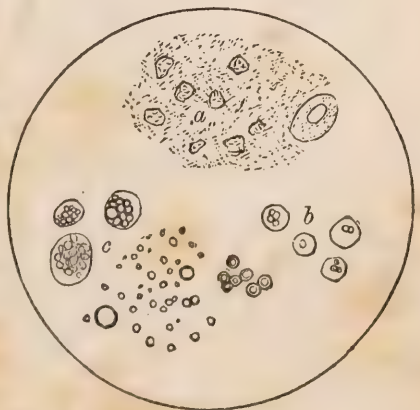
The condition of the urine varies in different cases of inflammation of the kidneys,

Fig. 17.



a. *Torula Cerevisiæ*, found in urine after it has undergone saccharine fermentation. *b.* Tessellated epithelium from the pelvis of the kidney.

Fig. 18.



a. Mucus found in urine; *b.* Mucus acted on by acetic acid; *c.* Oil Globules.

being almost always of an acrid, irritating character. Sometimes, on standing, it will deposit mucus, and which may be known by being soluble in liquor potassa, and forming an opaque, corrugated membrane when acetic acid is added to it. (See Fig. 18.) At other times, and especially

Fig. 19.



a. Coagulated Albumen; *b.* Vibrios found in the urine of debilitated persons.

when the structure of the kidney itself is affected, there will be a deposit of albumen, which may be known by its coagulating when heated, and also when nitric acid is added to it. (See Fig. 19.) As to the conditions of the urine in gravel and other diseases which may cause inflammation of the kidneys, they will be referred to in their proper places.

Acute nephritis runs its course rapidly, and may terminate in resolution, suppuration, occasionally in induration, and rarely in gangrene.

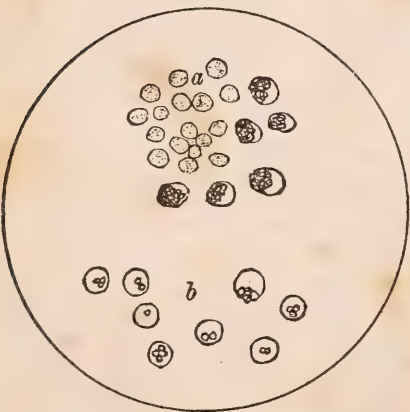
CAUSES. Acute inflammation may be induced by cold, mechanical injuries, intemperance, strains of the back, irritating diuretics, as Oil of Turpentine, Cantharides, &c.,

and by violent exercise. It may also be produced by the presence of gravelly concretions, translation of gout, rheumatism, recession of cutaneous eruptions, and sometimes it is the result of badly treated acute diseases.

PROGNOSIS. When there is a gradual subsidence of all the symptoms, the health being slowly recovered, the disease will terminate favorably, in resolution.

When the febrile symptoms together with the pain and tension gradually cease, and there is a profuse discharge of high-colored urine containing considerable mucus, or a general copious sweat, or bleeding from the rectum, the prognosis is favorable. If the disease is protracted beyond the seventh day, and an obtuse, throbbing pain in the part is experienced, with frequent returns of chilliness and shiverings, it is about terminating in suppuration. When the abscess opens into the pelvis of the kidney, the pus or matter is discharged with the urine, and may end in health, or in hectic fever and death. (See Fig. 20.) Sometimes it opens externally, and at other times into the colon, abdominal cavity, &c., most generally terminating fatally.

Fig. 20.



a. Pus globules in urine, 400 diameters; *b.* Pus globules acted on by acetic acid.

Pus may be known by being readily diffused through the urine by agitation; while mucus forms irregular, tenacious, ropy masses; a few drops of liquor potassa, added to pus converts it into a viscid, gelatinous mass; acetic acid added to a deposit of pus, renders the pus globules more transparent, with one or more internal nuclei.

DISCRIMINATION. Acute Nephritis may be detected from colic, by the deep-seated character of the pain, which is increased on firm pressure, by the frequent and scanty discharge of a deep red-colored urine, all of which are absent in colic, in which the pain is located more anteriorly, about the

umbilicus, and is relieved by pressure. It may be determined from an attack of gravel, by the paroxysms of acute spasmodic pain, bloody urine, and the want of febrile symptoms in the latter difficulty. In Lumbago, with which it may also be confounded, the pain is more superficial, and is aggravated on muscular motion in the loins, as in attempting to rise from the sitting posture, beside, there is no pain in the scrotum, no retraction of the testicle, no diminution of the urine, nor pain in passing it, no numbness of the thigh, and seldom any great degree of fever.

TREATMENT. From the rapidity with which acute inflammation of the kidneys runs its course, it is all-important to institute a proper treatment at as early a period as possible; and the course to be pursued, will depend entirely on the cause of the attack.

When it has been caused by cold, or exposure, it will be proper to produce perspiration as soon as possible, either by the Spirit vapor bath, or by the administration of the Compound Tincture of Virginia Snakeroot, which may be given in teaspoonful doses, and repeated every half-hour until copious perspiration takes place. The perspiration should be kept up for three or four hours, and afterward the same tincture administered every hour or two in small doses, sufficient to allay pain, lessen nervous irritability, and maintain a constant, gentle moisture on the surface. In addition to this, the surface of the body should be frequently bathed, with a warm, weak alkaline lotion, as in the previous diseases.

Should the bowels be constipated, a cathartic must be administered as soon after perspiration is produced as possible, for which purpose either the Compound Powder of Jalap may be used, or the Compound Powder of Leptandrin; and this may be repeated every day, or every other day during the inflammatory symptoms, should the constipation continue very obstinate.

To relieve the pain, hot fomentations of Hops and Stramonium leaves, or of Hops and Tansy, &c., may be applied over the region of the affected kidney, and these should be renewed frequently. In very violent cases, cupping over the part has been found efficacious. Mustard may be applied along the lower half of the spinal column, previous to the use of the fomentations.

In addition to these measures, mucilaginous diuretic infusions must be freely drank after the more active inflammation has been subdued, as an infusion of Marshmallow root, of Marshmallow root and Peach leaves, of Flaxseed, Mullein, &c., which will be found to have an excellent influence in lessening the inflammation. Other diuretics will be found of efficacy, as infusion of Cleavers, Maidenhair, Elder blows, Haircap moss, &c.

A course similar to the above may be pursued when the inflammation is occasioned by a recession of cutaneous eruptions, or by translated gout or rheumatism.

The Tincture of Gelseminum, administered in an infusion of Marshmallow root, has been found valuable in this disease. It may be administered in half-teaspoonful doses every half-hour, until its peculiar effects are produced, after which these should be kept up for some time. When there is acute pain, from two to five drops of Tincture of Aconite root, may be added to each dose. This is useful in all cases, whatever may have been the cause.

When mechanical injuries have caused the disease, the application of cups to the part will be found beneficial, in addition to the measures previously advised. If irritating diuretics have occasioned the inflammation, their use must be stopped, and mucilaginous diuretic draughts, with sweat-

ing and hot fomentations, will generally be all-sufficient to allay the pain and inflammation.

Fig. 21.



a. Crystals of uric acid with serrated edges, deposited from very acid urine; *b.* crystals of uric acid, rhomboid form, generally flat; *c.* crystals of uric acid often found mixed with urate of ammonia, or oxalate of lime.

N. B. All the crystals vary in color, from pale fawn to deep red.

care must be taken during convalescence, not to allow at too early a period a more stimulating food; a very gradual approach toward the ordinary diet is the proper course to pursue.

If the inflammation has been caused by urinary calculi in the kidney, or passing through the ureters, which may be suspected by the brick dust sediment of uric acid in the urine, before pursuing the preceding treatment, it will sometimes be found very advantageous to administer a grain or two of Opium, in pill or powder, and place the patient in a warm bath. A solution of the Bicarbonate of Soda may be given in table-spoonful doses every hour, when there is a deposit of uric acid in the urine. (See Fig. 21.)

The above treatment should be persevered in daily, until the inflammation is subdued, or begins to subside, when mucilaginous diuretics should be freely administered.

The patient should be kept quiet, and free from excitement; his diet during the inflammatory stage should consist only of mucilaginous drinks, as infusion of Flax seed, Gum Arabic water, barley-water, &c. And great

CHRONIC INFLAMMATION OF THE KIDNEYS.

CHRONIC Inflammation of the Kidneys, or Chronic Nephritis, is frequently the result of an acute attack; though it may occur from the peculiar character of the urine, or from mechanical injuries, &c.

SYMPTOMS. There is usually an obtuse, heavy pain in the neighborhood of the kidneys, a weakness in the small of the back, the urine is evacuated

Fig. 22.



a. Prismatic crystals of triple phosphate. *b.* Stellar and foliaceous crystals of triple phosphate.

irregularly, usually in small quantity, and at oft-repeated intervals, and yields a deposit on standing. The urine is most commonly alkaline, and the deposits consist of phosphate of lime, or triple phosphates; (See Fig. 22,) and sometimes pus will be found. The urine is occasionally turbid, or white, and milky in appearance. Partial impotency is frequently present, and sometimes the bladder becomes irritable and painful. Dropsical swellings, and weakness of the lower limbs, are often met with in the advanced stages of this disease. The pulse, in bad cases, becomes small and frequent, hectic fever ensues, with emaciation, night-sweats, great debility, and finally death.

TREATMENT. In this affection the bowels should be kept regular, daily, by some mild laxative, as a combination of two parts of powdered Rhubarb, with one of Bicarbonate of Potassa, of which from three to ten grains may be administered for a dose, or sufficient to procure one, but not to exceed two evacuations, as nearly approaching to those of health as possible, and this dose must be repeated three times a day. In addition to this the surface of the body should be bathed every day or two with a weak alkaline solution, to which some spirits or whisky has been added, and, in drying, considerable friction should be used. Every week or two, according to the strength of the patient, a Spirit vapor bath should be taken.

Internally stimulating diuretics will be found very useful, and among these are Uva Ursi, Pipsissewa, Queen of the Meadow, Trailing Arbutus, Wild Carrot, &c. One or several of these may be made into an infusion, and taken freely. In some cases, the Compound Pills of Soap, or the Compound Pills of Dandelion, may be used. Frequently, much benefit will be derived from the use of the Compound Copaiba mixture.

When pus is discovered in the urine, the Tincture of Muriate of Iron may be administered in doses of ten or twenty drops every two hours in a wine-glass of water, and a decoction of Thimble weed, (*Rudbeckia Lacinata*,) may be drank freely.

In long-standing, obstinate cases of chronic inflammation of the kidney, much benefit will be derived from the Compound Tar plaster placed on the back over the region of the kidneys, and a discharge kept up as long as the patient will submit to it. This is a very painful and annoying measure, which should not be used unless it becomes absolutely necessary, and then its advantages will great overbalance its disadvantages. Sometimes a current of electro-magnetism passed through the kidneys, will be found of much service, and then the above plaster can be dispensed with.

The diet should be nutritious, and easy of digestion, avoiding acids, fats, and all stimulating drinks; if the patient can take moderate exercise in the air, daily, he should do so; and should also attend, as much as possible, to the general hygienic rules. See *Bright's Disease*, *Diabetes*, *Gravel*, *Stone*, *Suppression of Urine*, *Retention of Urine*, &c.

INFLAMMATION OF THE PERITONEUM.

INFLAMMATION of the Peritoneum or Acute Peritonitis, is an inflammation of the peritoneal or serous covering of the abdominal viscera. It is more frequently met with among parturient females under the names, *child-bed fever*, *puerperal fever*, and *puerperal peritonitis*. However, it occurs among females at other times, and is by no means an uncommon disease among males. It may affect the whole peritoneum, or only certain portions of it.

SYMPTOMS. As with other forms of inflammation, peritonitis is generally preceded by chills, followed by the ordinary symptoms of fever or inflammation, as increased temperature of the surface, great thirst, pulse full, strong, and frequent, from 110 to 140 in a minute, dryness of the skin, flushing of the face, redness of the eyes, white and dry tongue, with red edges, diminished appetite, restlessness and wakefulness, short and quick breathing, frequently nausea and vomiting, and among parturient women, a violent pain across the forehead. Occasionally these premonitory symptoms are very slight, or they may be entirely absent. A sensation of pain and soreness is experienced either in a particular part of the abdomen, or over

the whole of it, and which in the early part of the disease may be confounded, among parturient females, with after-pains; but they may be distinguished from them by the pain or soreness produced on pressure over the parts affected, which is not present during after-pains. The urine is deficient, muddy, or high-colored, and is voided with difficulty; the bowels are obstinately costive; and among parturient females the secretion of milk, as well as the lochial flow, are usually diminished, or entirely suppressed, and the breasts become loose and flabby.

As the disease progresses, the pain and uneasiness increase rapidly; the bowels which were at the onset soft and yielding, become puffed up and tympanitic; the pain is very much aggravated on the slightest motion, as coughing, vomiting, moving the limbs, or turning in the bed, &c., as well as by the pressure of the bedclothes; and to obtain relief the patient lies upon the back, with the knees raised and flexed, which affords relaxation to the muscles of the abdomen, and at the same time holds up the bed-covers. The sufferings are expressed by groans or screams, and by constantly tossing the arms, or rolling the head about. It is not unusual for patients to defer the evacuations of the bowels and bladder, as long as possible, in order to avoid the pain occasioned by attending to them. The pulse becomes much accelerated, small, and wiry, from 120 to 160, and even more, per minute, the tongue becomes furred yellowish or brown, and diarrhea usually comes on.

No one patient will exhibit all the above symptoms, which will be found to vary; thus, the pain may be slight, and the tension of the bowels may be absent altogether, or it may not manifest itself until in the last stage. But the most common and uniform symptoms are, the rapid pulse, chills, pain, vomiting, and swollen abdomen. The pain may diminish with the subsidence of the abdominal swelling, or it may be very much increased. The countenance of the patient is indicative of the extent of anguish, presenting a pallid, anxious, and haggard appearance, with a purple tint beneath the eyes, and not unfrequently a circumscribed redness on the cheeks, which is rather a serious symptom.

Finally the symptoms change, the matters vomited are dark-colored, or green, the discharges from the bowels are dark and offensive, and frequently diarrhea occurs; a cold and clammy perspiration covers the surface; there is a cessation of the pain; a low state of delirium, hiccough, involuntary evacuation of the urine and feces, picking or grasping at the bedclothes or in the air, a small and very frequent pulse, gradually diminishing, and death takes place from the sixth to the ninth day.

CAUSES. Peritonitis is generally occasioned by cold, injuries to the abdominal organs, long-continued and violent exertions, suppression of customary discharges, and the ordinary causes of inflammation. Among parturient females it usually comes on in from two days to three weeks after delivery, and the earlier the attack the more serious is the disease apt to be; it may be caused by cold, neglecting to apply the bandage, improper food, severe mental or physical exertions, neglecting to evacuate the bowels, getting out of bed too soon, retention of pieces of the after-birth, and it often follows manual or instrumental labors. It frequently occurs among recently-delivered females, as an epidemic, when it is more malignant and formidable in its character, being most commonly associated with an erysipelatous condition of the parts attacked.

The medical world is about equally divided in opinion as to the contagious or non-contagious character of puerperal peritonitis, some viewing it to be extremely contagious, and others the opposite. But, as the question is not definitely settled, the better plan is to act in all cases as if the contagious

nature of the disease had been completely demonstrated. Pregnant females should not be allowed to enter the room of a child-bed fever patient, and the physician or midwife who is attending a patient with puerperal fever, should not attend to any obstetric practice, at least, for some time.

DISCRIMINATION. Peritonitis may be distinguished from *after-pains*, by observing that in the latter, pressure does not increase nor produce pain, nor is the pulse so rapid as in the former, being most commonly natural. It may be determined from *colic*, by the relief afforded by pressure in the latter, the pain occurring in paroxysms, and the pulse being natural or but slightly accelerated. From *inflammation of the bowels* by the disposition to costiveness in peritonitis, and by the pain being more acute, the tympanitic condition of the bowels, augmented pain on pressing over the affected part, and by no mitigation of the pain when the bowels are spontaneously evacuated. In inflammation of the bowels, the discharges contain serum, mucus, or blood.

PROGNOSIS. Although peritonitis rapidly runs its course toward an unfavorable termination, it is by no means an incurable disease, and will generally yield to active and correct medication. It is far more dangerous when it attacks parturient females, especially when in the form of an epidemic. If the pulse becomes less rapid and more natural; the great heat of the skin diminishing with a moisture upon the surface; the breathing being less laborious, the patient being able to make a full inspiration; a free and more regular flow of urine which gives a deposit on standing, either of uric acid, or phosphate of lime; the pain and tension of the abdomen gradually diminishing, with an ability to move in bed, or sit up; thirst less urgent; tongue becoming clean; bowels more easily acted upon, or, perhaps, a gentle diarrhea; and the sleep being more refreshing—these are favorable symptoms. Among parturient women the lochial discharge reappears, and the milk returns in the breasts.

When the disease is about to prove fatal, there is a sudden cessation of pain, or it is much less severe on pressure; the pulse is sinking, fluttering, and thready; the tympanitis is unyielding; the skin cold and clammy; with hiccough, dark-colored, or greenish vomitings, dilated pupils, perhaps slight delirium, diarrhea, involuntary discharge of urine and feces, and picking at the bedclothes. The most serious period of the disease is from the third to the fifth days.

TREATMENT. The most important indication is to subdue the inflammation as promptly as possible, and bring about resolution; for if the disease terminates in effusion, the patient seldom recovers. At the commencement of the disease, active purgation should be effected as soon as possible, for which purpose the Compound Powder of Jalap may be given in combination with ten or twelve grains of Cream of Tartar; this may be repeated every three hours until the desired effect is produced. In some instances, a combination of Podophyllin two grains, Leptandrin four grains, and Cream of Tartar ten grains, may be substituted for the above, and administered every three or four hours, until the cathartic effect is induced. The action of these purgatives may be greatly facilitated by injecting into the rectum, after two or three hours have elapsed, about half a table-spoonful of the Compound Tincture of Lobelia and Capsicum, diluted with a fluidounce or two of a warm infusion of Boneset, Senna, or Lobelia. Much suffering and annoyance will be saved the patient by not permitting her to get up when the bowels or bladder require to be evacuated—receiving the discharges on some refuse cloths, or in a bedpan, while she lies on her back, with the head and shoulders not raised by pillows.

If the strength of the patient will permit, the cathartics should be given every day, for two or three days, after which, one gentle evacuation should be procured daily, by injection, or laxatives, as, a decoction of Leptandra root, (See Typhus Fever,) or, when tympanitis is present, Castor Oil and Turpentine, equal parts of each, may be given in half-fluidounce, or fluid-ounce doses.

After the purgative, referred to above, has been given, we must not lose time by waiting for its operation, but proceed at once to produce copious perspiration, and which will aid the action of the cathartic. If the condition of the patient will permit, the Spirit vapor bath may be used; otherwise, the Compound Tincture of Virginia Snakeroot may be given in doses of a teaspoonful every hour or two, in a warm infusion of Balm, Catnip, Crawley, Pleurisy root, or other simple herb. After a copious perspiration has been induced, the tincture should be given in smaller doses, repeated at longer intervals to maintain the state of perspiration during the presence of the inflammatory symptoms.

Before giving the tincture, as above, it will be advantageous to bathe the surface of the body with a warm alkaline fluid, drying with a coarse towel; and this bathing may be repeated several times a day whenever the inflammatory symptoms are severe, or the skin becomes hot and dry.

When the pain and inflammation are violent, the Tincture of Gelsemium may be given in half-teaspoonful or teaspoonful doses, repeated every hour, and from three to five drops of the Tincture of Aconite root, may be added to each dose. And when the peculiar effects of the Gelsemium are produced, its further use may be omitted, until the symptoms of inflammation return with severity. In some instances, fifteen or twenty drops of a mixture of equal parts of the Tinctures of Digitalis and Stramonium, repeated every hour or two, will be found advantageous.

For relieving the tension, pain, and soreness in the abdomen, fomentations of Hops and Tansy should be placed over the abdomen, as hot as can be borne; renewing them often, not allowing them to become cool. Some care is required not to annoy the patient by wetting the sheet or bedclothes with these fomentations. Hops and Lobelia, or Hops, Lobelia, and Stramonium leaves, may be used with benefit. There is no agent so decidedly advantageous as a fomentation in all abdominal inflammations, as Stramonium leaves; the recent leaves bruised, warmed, and applied, are more prompt and efficacious than the dried leaves; the latter should be combined with equal parts of Hops and Lobelia. In very violent cases of peritoneal inflammation, I have continued the use of Stramonium fomentations even after its narcotic symptoms, as double vision, &c., had continued for some time, and *in all cases* with advantage, allaying pain, and effecting a permanent subsidence of the inflammation. When the bowels are tympanitic, Oil of Turpentine should be added to this fomentation. As soon as the pain and inflammation subside, or when prostration takes place, the fomentations should be omitted. In very severe cases, in addition to the above measures, Mustard poultices may be applied to the legs, inside of the thighs, and along the spinal column.

The drink of the patient should be of a mild diuretic character, as Cleavers, Elder flowers, Maidenhair, of each an ounce, made into an infusion with three pints of water—or an infusion of Marshmallow root and Peach leaves—of Horsemint and Mayweed—Hair-cap moss, &c.; these may be drank freely, and will not only assuage thirst, but will also aid in lessening the severity of the attack. Acidulated drinks, as lemonade, tamarind water, &c., may be allowed whenever there is a dark or brown fur on the tongue. When the thirst is excessive, ice and iced-water will be found not only useful in allay-

ing the thirst, but to overcome vomiting and gastric irritability when present. The vomiting may likewise be frequently allayed by the use of Peppermint, Anise, or Spearmint water, with Laudanum added; or, perhaps a draught of Soda or Seidlitz water, with Lemon juice and a few drops of Laudanum. A Mustard poultice over the region of the stomach will frequently be of service.

Of course, the promptness and energy with which the above treatment may be pushed, will depend upon the degree of violence of the attack, being less active in the mild forms, and more active in the severe. But after the more severe symptoms have been subdued, the remaining treatment may consist of the administration of the Compound Powder of Ipecacuanha and Opium, in the proper doses, repeating it every two or three hours; or the Compound Powder of Quinia may be substituted. In parturient women, the Tincture of Muriate of Iron will be found more efficacious.

Beside the external applications to the abdomen, it will frequently become necessary to administer internal means to aid in overcoming the tympanitic distension; Castor Oil, Oil of Turpentine, each, half a fluidounce, Paregoric two fluidrachms, may be added together, and injected into the rectum, repeating it every two or three hours, until an evacuation ensues; and while using this injection, no internal cathartics must be given, except in very obstinate cases of constipation. The Tincture of Prickly-Ash berries internally, and used as an injection, has proved serviceable in tympanitis. One or two table-spoonfuls added to a similar quantity of water, may be used as an injection, repeating it every hour, or oftener if required. Half a teaspoonful of Laudanum may be added to each injection, when there is severe pain. Or it may be added to the Compound Tincture of Lobelia and Capsicum; or, to the above Castor Oil, &c., injection. It must not be used until the more active inflammatory symptoms have somewhat subsided.

Among parturient women, the vagina should be injected several times a day, with a warm decoction of Golden Seal, or of Golden Seal and Lobelia, or even of warm water, in order to cleanse the parts from all putrid matters, and thus render the patient more comfortable.

Sometimes, and more especially among females recently delivered, the disease assumes a *typhoid form*, in which the previously named active treatment must be stopped; though the means for tympanitis must be continued, should it be present.

The bowels must now be kept free, producing one, but not to exceed two moderate evacuations daily; and the same means may be used for this purpose as recommended in Typhus Fever, page 206. To aid in keeping up a gentle moisture of the surface, the following may be given:—Take of Compound Powder of Ipecacuanha and Opium forty grains, Sulphate of Quinia twenty grains; mix, and divide into ten powders, of which one may be given every two or three hours. In some instances, a small proportion of Podophyllin may be added to each dose, sufficient to produce a mild laxative effect; in which case omit the other laxatives.

Among parturient females, the Tincture of Muriate of Iron, in doses of ten or twenty drops, in a wineglass of water, repeated every hour, will be generally found superior to every other remedy, especially, if the disease be associated with erysipelas. Indeed, I have frequently obtained the most efficacious results by administering from the beginning of the disease the Tincture of Aconite root, and the Tincture of Muriate of Iron, by turns successively every half hour, or hour.

When the tongue is furred yellow or dark, acidulous draughts should be

used, not forgetting that good tart Cider is not only agreeable and reviving, but is very salutary in its action on the system at this time. If the prostration be very great, stimulants must be given to sustain the system until the reactive efforts ensue, as Sparkling Catawba, Porter, Sherry, Brandy, &c. And the other symptoms of a typhoid nature must be treated as heretofore named under the typhoid conditions of fevers, and in Typhus Fever, which see. For diarrhea, see Typhoid Fever, page 211, also Diarrhea.

The diet during the inflammatory stage must be light and cooling, consisting principally of barley-water, rice-water, prune-water, &c.; in the latter stages, gruel, panada, apple sauce, toast-water, &c., may be given. And when there is but little to fear from a relapse, during the convalescence, the patient should be gradually accustomed to a more hearty and nourishing diet, commencing with chicken-broth, veal tea, beef tea, &c., and cautiously permitting solids. Throughout the whole disease, the patient should be kept in a state of quiet and rest; and the room should be kept cool, and be frequently ventilated.

CHRONIC INFLAMMATION OF THE PERITONEUM.

CHRONIC Inflammation of the Peritoneum, or Chronic Peritonitis, may follow as a result of the acute form; but it is frequently met with independent of any previous active inflammation. All ages are liable to it, and among children, especially those of a scrofulous diathesis, it is by no means uncommon; constituting one of the forms of marasmus, more popularly known as "consumption of the bowels."

When chronic peritonitis is not the result of the acute form, it is gradual and insidious in its approach, and often serious organic disorder, or effusion, takes place before the physician is called to treat the case. Among females, it frequently follows miscarriages, or difficult, protracted labors, in which, from some cause, a low grade of inflammation has been produced, not sufficiently active to attract the patient's particular attention.

SYMPTOMS. During the early stage of chronic peritonitis, the patient is capable of continuing ordinary occupations, but always complains of an increase of pain or soreness across the abdomen, from any motion or fatigue; and these sensations are aggravated slightly when pressure is applied. After a time, the belly becomes more or less enlarged, and somewhat tense, which is the greatest toward evening. Upon percussing or striking the abdomen on one side, with the ends of the fingers of one hand, and applying the palm of the other over the opposite side, a sense of fluctuation will be observed, indicating the presence of a fluid within the abdomen; and this act of percussion, as well as any sudden jolt, or quick motion of the body, coughing, sneezing, &c., will produce a degree of pain. In general, the appetite remains unaltered, and digestion continues regularly. Sometimes, there is thirst, and want of sleep and appetite; occasionally, vomiting. In some instances, a sensation is experienced as if a ball were rolling about in the belly, and rising toward the throat. As the disease advances, the features appear sharp and contracted, and the countenance, pale, sallow, and doughy; obstinate costiveness usually prevails, and often chills and fever, somewhat like those of intermitting fever, accompany the disease. Debility, emaciation, cough, difficult breathing, and slight fever toward evening, come on, the patient becomes exhausted, and hectic fever, or a dropsical swelling of the legs and abdomen takes place, in either case terminating in death. The disease may continue for an indefinite period with a swollen

and hard abdomen, and but little pain or uneasiness; and the constipated condition of the bowels may alternate with diarrhea.

TREATMENT. The bowels must be kept regular daily by means of mild aperients, as, for instance, the Powder of Rhubarb and Bicarbonate of Potassa, on page 284. The surface of the body and limbs must be kept as healthy as possible, by daily bathing with a weak alkaline solution, or salt water; and the Spirit vapor bath should be used every week or two, according to the strength of the patient. Internally, the Compound Syrup of Yellow Dock, or some similar alterative should be administered, and, in addition, a Solution of Iodide of Potassium should be used daily; thus, Iodide of Potassium from twenty to forty grains may be dissolved in distilled water, half a pint, of which from half a wineglassful to a wineglassful, may be taken three or four times a day. This will be especially necessary to promote the activity of the absorbents, and remove or prevent effusion. Diuretics of a stimulating character should also be used, as infusions of Haircap moss, Queen of the Meadow root, Dwarf Elder bark, &c., and in which the Iodide of Potassium may be dissolved instead of the distilled water above-named. In long-standing, or obstinate cases, the Compound Tar plaster placed over the whole of the abdomen, and a constant discharge of purulent matter kept up for a long time, will be found a very effectual means of cure, in conjunction with the preceding measures. But if effusion to any extent, has taken place, and the disease will not yield to the above means, pursued for a reasonable length of time, then, the case should be treated the same as recommended for Dropsy of the Abdomen.

The diet should be nourishing, avoiding all acids, fats, and other articles which disagree with the patient; moderate exercise should be taken regularly and daily; and if the patient be pale and anemic, some preparation of iron should be given, as Carbonate of Iron, Citrate of Iron and Quinia, &c. Should any febrile or inflammatory symptoms be manifested, they must be promptly subdued by means similar to those named in the treatment of Acute Peritonitis.

INFLAMMATION OF THE WOMB.

INFLAMMATION of the Womb, or Acute Metritis, seldom happens, except in women who have aborted, or in parturient or lying-in women, in whom it may occur at different periods, varying from delivery to one or two weeks afterward, or even later; more commonly it appears on the second or third day after the birth of the child, and the inflammation is more especially confined to the proper substance of the womb.

SYMPTOMS. It is generally preceded by shiverings, and a general feeling of uneasiness and anxiety, followed by a hot, dry skin, pain in the head, thirst, rapid pulse, furred tongue, and other symptoms common to inflammations. Constant pain is felt in the neighborhood of the womb, which is much increased when deep pressure is made. The secretion of milk is diminished, or entirely ceases, and the lochial discharge is suspended. The urine is deficient, and is passed with pain and difficulty; and the mouth of the womb will be found tender and very hot. The bowels frequently become tympanitic, and when the inflammation extends to the peritoneal covering of the uterus, the pain increases, as well as the febrile symptoms, and the countenance is indicative of great suffering and apprehension. As the disease progresses to an unfavorable termination, the surface becomes cold with a clammy sweat, the pulse frequent and weak,

the breathing quick and oppressed, with sudden muscular prostration, tympanitis, vomiting, dark coat on the tongue, and sordes on the lips and teeth, diarrhea, low delirium, mutterings, twitching of the tendons, coma, and death.

Inflammation of the womb terminates favorably by resolution; unfavorably, by abscess, softening of the womb, or gangrene.

CAUSES. This disease may be caused by cold, by tedious or difficult labor, by improper interference during labor, by endeavors to force the delivery of the child and after-birth, by strong diet during confinement, by heating or alcoholic drinks, and sometimes it occurs without any assignable cause.

TREATMENT. Inflammation of the womb is very rapid and fatal in its progress, and must be treated promptly and energetically. The treatment named for Acute Inflammation of the Peritoneum must be pursued,—see page 307, and the acrid and fetid discharges must be cleansed from time to time by injections of warm water, or warm infusion of Peach leaves, wild Indigo leaves, &c., into the vagina. The diet and subsequent management in convalescence will be the same as advised in Acute Peritonitis.

INFLAMMATION OF THE BLADDER.

INFLAMMATION of the Bladder, or Cystitis may attack the mucous membrane of the bladder, or its muscular coat, more commonly the former, and it may be confined to one portion of it, or involve the whole membrane. Like inflammation of other organs, it may be either acute or chronic in its character; the former is a rare affection, the latter is more common.

SYMPTOMS. Acute inflammation of the bladder, is seldom ushered in with chills, and other febrile symptoms as in ordinary inflammatory attacks; usually there is a severe burning and throbbing pain with some degree of tenseness in the region of the bladder, and which is increased by pressure upon the part. The desire to urinate is constant, and it is voided with extreme difficulty, occasioning an increase of pain; it may pass away drop by drop, or it may be entirely suppressed, causing a swelling of the bladder and great distress. The urine commonly contains mucus. The pain may extend to the penis, the scrotum, the perineum, and other parts in the vicinity of the bladder. There is generally more or less fever attending, with hot and dry skin, frequent and hard pulse, great thirst, tongue coated, and constipation, or frequent but ineffectual efforts to evacuate the bowels. Not unfrequently, nausea, vomiting, restlessness and great anxiety are present. In unfavorable cases, as the disease advances, a low, typhoid condition ensues, there is low delirium, or stupidity, pale, hollow, and death-like countenance, and the patient dies in coma, or in convulsions.

CAUSES. Acute cystitis may be produced by direct injuries, as the careless introduction of bougies or catheters into the bladder, wounds, horse-back riding, and stone in the bladder; strictures in the urethra, enlargement of the prostate gland, translation of gonorrhea, gout, rheumatism, &c., exposures to cold, acrid diuretics as Cantharides, Oil of Turpentine, as well as injections of irritating substances into the bladder, may occasion the disease. In severe cases the treatment must be prompt and energetic, or the patient may die in a week or two.

TREATMENT. This will be nearly the same as advised for Acute Inflammation of the Kidneys. Perspiration should be produced by the Spirit

vapor bath, or by the use of the Compound Tincture of Virginia Snake-root; and the bowels should be evacuated by the Compound Powder of Jalap, ten or twelve grains of Cream of Tartar being added to the dose. At an early period, hot fomentations of Hops and Lobelia, or Hops and Stramonium leaves, or other bitter or narcotic herbs, should be applied over the region of the bladder, and to the perineum; and mucilaginous diuretic infusions may be freely drank, as an infusion of Marshmallow and Peach leaves, or an infusion of Marshmallow and Cleavers. Other diuretics will frequently be found beneficial, as Hair-cap moss, Wild Carrot, Elder blows, &c.

To lessen the constant desire to evacuate the bowels as well as to urinate, an injection composed of twenty or thirty drops of Laudanum added to a fluidounce of Marshmallow or Elm infusion, may be given, and repeated as often as required. And in very violent cases, it has been recommended to apply cups to the perineum, to the sacrum, and over the region of the bladder; or the Compound Tar plaster may be applied on the back over the region of the kidneys.

The diet must be confined, during the inflammatory stage, to mucilaginous draughts; and if the urine is suppressed, or the bladder becomes much distended, this fluid must be drawn off by means of a catheter. The patient must be kept as quiet as possible. In the typhoid condition, means similar to those advised in such a condition following other acute attacks must be employed. During convalescence, the same care is necessary as in Nephritis.

CHRONIC INFLAMMATION OF THE BLADDER.

THIS difficulty has also received the names "Chronic Cystitis," "Cystirrhœa," and "Catarrh of the Bladder." It is a chronic inflammation of the mucous lining membrane of the bladder, and is more commonly met with among the aged, being generally associated with some disease of the prostate gland, and among whom it is very apt to prove fatal.

SYMPTOMS. When the disease comes on gradually there will be noticed at first a deposition of more or less mucus on allowing the urine to stand for a time, (See fig. 18,) but as it advances, as well as when it comes on more rapidly, there will be a dull, uneasy sensation in the region of the bladder, with more or less frequent desire to urinate, and a difficulty in retaining the fluid in the bladder. The flow may be increased or natural, but as the affection proceeds, the mucus becomes much augmented, and always settles to the bottom of the urine on standing, leaving the fluid above perfectly clear, and in cases of long standing, pus, and even small quantities of blood will be found mixed with the mucus, more especially when abscesses have formed. Several pints of this tenacious mucus have been voided by some patients in one day. Large deposits of the phosphates are usually met with in the urine, particularly the triple phosphate of Magnesia and Ammonia. (See fig. 22.) Generally, when the calls to urinate are frequent, its discharge will be accompanied by spasmodic contraction of the bladder, and a painful burning sensation along the urethra.

Most generally there is a persistent feeling of uneasiness in the vicinity of the bladder, a degree of heaviness in the perineum, pain and weakness in the back and loins, sometimes extending into the testicles, with irritability of the rectum. There may also be in some cases a mild fever, thirst, tongue somewhat coated, restlessness, hot and dry skin, &c.

If the disease is allowed to progress, ulceration of the bladder, and disease of the prostate gland occur, the system becomes debilitated, the various secretory organs become deranged, debility and emaciation supervene, with hectic fever, nervous irritability, and finally dissolution.

CAUSES. Chronic Cystitis may follow the acute form; and it may also be produced by causes similar to those occasioning this latter form. It is also frequently caused by intemperance, a constant habit of retaining the urine for a long time before evacuating it, high-seasoned food, excessive venery, sedentary habits, and masturbation, which last I have found in my own practice to be a more common cause than is generally suspected. The disease is more readily curable among the young than the old, and in some cases even when pus is discharged with the urine.

TREATMENT. Stimulating diuretics will be required in the treatment of this disease, and their employment should be alternated, as otherwise the system may become habituated to their use, and no good results be obtained. Among the most valuable diuretics of the above character, the leaves of *Uva Ursi*, of *Buchu*, of *Trailing Arbutus*, and the roots of *Queen of the Meadow*, may be used in infusion or decoction. A most valuable agent which I have successfully used for twenty years past, is the the Compound Infusion of *Trailing Arbutus*; but, in some cases, especially those attended with a low grade of fever, it may become necessary to omit the *Gin*, making a simple decoction of the articles.

Considerable advantage will frequently be derived from the internal administration of the following mixture:—Dissolve Alum ten grains, in a gill of water; stir in it Benzoic Acid ten or twenty grains, and take for a dose; this may be repeated three or four times a day, and will found more particularly beneficial in case of excessive mucous discharges with phosphatic deposits. In similar instances I have likewise witnessed the most decided and permanent effects from the daily use for some days or weeks, of the Compound Balsam of Sulphur. I have, in many obstinate cases, where *Copaiba*, *Buchu*, *Uva Ursi*, &c., were unproductive of benefit, advised the free use of an infusion of the pods or hulls of the common bean, and which has been invariably followed with the most happy results. The Compound *Copaiba* Mixture will frequently be found of service, in this malady, as a stimulating diuretic, exerting an especial influence on mucous tissues.

It will likewise be proper to inject into the bladder once or twice a day, a tepid infusion of equal parts of *Golden Seal* and *Solomon's Seal* roots; it should be injected through a gum elastic catheter by means of a small syringe, in the quantity of half a fluidounce or a fluidounce at a time, and may be allowed to remain in the bladder as long as it does not occasion pain or uneasiness. Great care should be taken to filter the infusion, that no solid substance be passed into the bladder with it, to form the nucleus for a subsequent stone. When pus or blood appears in the urine, an equal part of *Geranium* root may be added to the above mixture for an injection; or, an infusion of equal parts of *Golden Seal*, *Geranium*, and *Witch Hazle* bark, may be used.

In addition to the above measures, the bowels must be kept open by mild aperients, as the mixture of *Rhubarb* and *Bicarbonate of Potassa*, referred to on page 284; the skin should be frequently bathed with a weak alkaline solution, and a Spirit vapor bath administered every two or three weeks. The diet should be light but nutritious, easy of digestion, avoiding fats, spices, and stimulating drinks, according to the excited or depressed condition of the system. In cases where there is a gouty or rheumatic condition, the patient may take from ten to thirty drops of a mixture of equal parts of

Tincture of Colchicum seed, and Tincture of Black Cohosh root; it should be taken in some water, or mucilaginous infusion, and be repeated three or four times a day. If there is a scrofulous habit of body, the Compound Syrup of Stillingia with the Iodide of Potassium should be administered. If there is a venereal taint in the system, the following will be found efficacious:—Take of Compound Syrup of Stillingia, Tincture of Poke root, Tincture of Sheep Laurel, each, four fluidounces; mix. The dose varies from a teaspoonful to half a table-spoonful three times a day, in some water, according to the effects of the Laurel upon the system.

Chronic inflammation of the neck of the bladder is a disease very seldom cured by the treatment ordinarily pursued by physicians, but the above course will be found very effective; by it, I have succeeded in curing quite a number of cases. The worst case I ever saw of this malady, was that of Dr. S——, who had labored under it for several years, and had faithfully followed the prescriptions and advice of the most eminent medical men in the country, but without the least benefit. Immediately after urinating, he always experienced a violent indescribable, cramp-like, aching pain in the perineum and region of the neck of the bladder, which frequently extended over the whole of the lower region of the pelvis, and low down into the thigh; the urine, from time to time, passed through the urethra as though it were poured into it, the neck of the bladder was distended and painful to the touch, as well as on standing or sitting; and standing often caused a paralytic sensation and uneasiness in one or both of the thighs. Occasionally, the urine would pass with much pain and difficulty. Beside these symptoms he suffered from cold feet, swelled feet, hectic fever, night-sweats, and a distressing cough. Notwithstanding these unfavorable symptoms, the treatment I pursued effected a rapid and permanent cure.

GONORRHEA.

Gonorrhea or Clap, is an inflammation of the mucous membrane lining the canal of the urethra, accompanied with an infectious discharge, and is owing to the application of a morbid matter, generally, at the time of an impure cohabitation.

By most writers this disease is placed among those peculiar to the department of surgery, but I can see no satisfactory reason for so doing. We may have an inflammation of the urethra, same as of the eye, without any infectious discharge; and like a certain inflammation of the eye, we may likewise have one of the urethra, discharging matter of an infectious nature. I have placed this disease where I believe it should be, among affections of an inflammatory character.

SYMPTOMS. Gonorrhea most generally shows itself in from two to four days after an improper connexion, but with some persons, there will be no appearance of it until after two or three weeks. It commences with a sense of uneasiness, as an itching in the glans penis, and a soreness and tingling sensation along the whole course of the urethra, with a slight degree of burning or smarting on making water, and a small quantity of a whitish matter may be observed at the orifice. In a day or two the discharge of matter increases, becomes thinner, less adhesive, and of a greenish or yellowish color, the glans penis presents a red and inflamed appearance, especially at the orifice, the stream of urine becomes smaller, and whenever passed, occasions much pain and scalding. The bladder, most generally, from sympathy, becomes irritable and incapable of retaining the urine for any length of

time, causing the patient to urinate frequently, with a constant uneasiness about the scrotum, perineum, and fundament. The patient becomes pale and loses flesh rapidly.

Sometimes, when the inflammation is considerable, there will be observed a slight quantity of blood in the discharge. When it exists in a very high degree, it produces what is called a *chordee*, in which, at the time of erection the penis is curved downward, with great pain. This is very apt to occur when the patient is warm in bed, depriving him of sleep, and sometimes causing an involuntary emission of semen. From the inflammation *phymosis* is apt to ensue, in which the foreskin becomes so swelled over the glans penis, that it cannot be drawn back; when this swelling takes place behind the glans, so that it cannot be drawn forward, it is called *paraphymosis*. Sometimes small, hard swellings may be observed on the lower surface of the penis, along the course of the urethra, and these may suppurate and form troublesome fistulous sores.

The glands of the groin often become swollen and indurated from the excessive inflammation present; or, one of the testicles becomes swelled and inflamed, occasioning excruciating pains, extending from the seat of the complaint up into the small of the back, with a symptomatic fever.

If Gonorrhea be properly attended to, it may be cured in from three to seven days; some persons, however, will require as many weeks, or even longer, and especially in those cases where the cure is attempted by medicines per mouth. Patients who continue using intoxicating liquors, high-seasoned food, much exercise, &c., may not be cured for months, and in such cases it is very apt to leave a *gleet* behind, besides being accompanied with the risk of giving rise at some distant period to a constitutional affection, especially if there has been a neglect of proper cleanliness, occasioning excoriations or ulcers on the glans penis, sore throat and mouth, sores on the body and head, loss of hair, &c.

When the disease has remained for some time, from the falling of the matter on the various parts of generation, numerous and troublesome warty excrescences are apt to arise. When gonorrhea is of long standing, or has been improperly treated, *stricture of the urethra* is very apt to follow, which may be known by more or less difficulty and pain in making water, the diminution of the stream, which passes spirally, or splits into two streams, and by the involuntary escape of a few drops of urine after the evacuation of the bladder.

Among females similar symptoms are present, but usually of less severity, —heat and soreness in urinating, a discharge of colored matter, slight pain in walking, and uneasiness in sitting; stricture is uncommon among them, being seldom, if ever, met with. Instances have occurred where the husband has contracted an inflammation of the urethra from his wife, who was suffering only from leucorrhea, or perhaps some inflammatory affection of the vagina; great care is, therefore, necessary, before pronouncing upon the disease, as the health and reputation of the parties, as well as the character of the physician, may be jeopardized by too premature or hasty conclusions. Still I have good reasons for considering, in many instances, the inflammation thus produced, as infectious as that ordinarily termed gonorrhea. I can see no reason why an acrid discharge from vaginal inflammation, or an acrid leucorrhea, when it does develop urethritis in the male, may not be of an infectious nature. Indeed, I consider these conditions, together with uncleanliness of the parts, as the true and original source of gonorrhea. I have likewise no doubt but that many persons who have cohabited with females in the above situations might have escaped gonorrhea had they not

aided the exciting cause by excessive drinking immediately before or after the act, thus rendering the urine more acrid and irritating in its character. I have known gonorrhea caused by the parts coming in contact with gonorrheal matter, and though this mode of contracting the disease is denied by some, I have no doubt of its correctness. With some persons, a drop or two of a saturated solution of Muriate of Ammonia, let fall into the urethra and allowed to remain there, will cause urethral inflammation of a severe character, with a discharge which will prove equally as infectious as that from gonorrhea. All of which, with other circumstances which cannot be referred to in a work as limited as this, lead me to believe that ordinary gonorrhea is nothing more nor less than the same character of urethral inflammation which is occasionally produced by other causes than that of improper cohabitation.

TREATMENT. When gonorrhea makes its appearance for the first time, it is generally accompanied with a greater degree of inflammation than in any subsequent attacks, and is very apt to be more obstinate in its character. When symptoms of active inflammation are present, a purgative must be given, and repeated daily if the inflammatory symptoms continue violent; the Compound Powder of Jalap with ten or fifteen grains of Cream of Tartar to the dose, will answer every purpose. After the operation of the purgative some one of the various compounds which have been found efficacious, may be used—among them are the following:

1. Take of Canada Balsam one fluidounce, Spirits of Nitre Dulce four fluidounces, Oil of Turpentine two fluidrachms, Powdered Camphor one drachm; mix well together. The dose is a teaspoonful three times a day. When the inflammatory symptoms have been subdued, Powdered Kino one drachm, may be added to the above. I make more use of this preparation internally, than any other, in this disease, having the patient to use with it as a drink, during the inflammatory stage, an infusion of Marshmallow and Burdock roots.

2. Take of Balsam Copaiba, Spirits of Nitre Dulce, Compound Spirits of Lavender, Tincture of Muriate of Iron, each, one fluidounce; mix. The dose is a teaspoonful three times a day. This mixture and the one following are very disagreeable to the taste, but are very efficacious after the inflammatory symptoms have subsided. They must be shaken thoroughly previous to taking each dose, and in order to protect the teeth from the injurious action of the acid in the Tincture of Muriate of Iron, it is advisable to rinse the mouth immediately after taking each dose, with a solution of saleratus, or supercarbonate of soda.

3. Take of Oil of Cubebs, Oil of Anise, Balsam Copaiba, Laudanum, Tincture of Muriate of Iron, each, one fluidounce; mix. The dose is a teaspoonful three times a day.

4. Take of Solidified Balsam Copaiba two ounces, White Wax one ounce, Oil of Cubebs, Oil of Spearmint, each, one fluidrachm, finely powdered Nitre two drachms. Melt the wax, add the oils, and then the Copaiba; stir all thoroughly together, and finally add the Nitre. This forms a paste much used for the cure of gonorrhea; the dose is from ten to thirty grains three times a day.

5. Take of powdered Alum one drachm, Precipitated Carbonate of Iron half an ounce, Pulverized Cubebs one ounce, Balsam Copaiba a sufficient quantity to form a paste. The dose is the same as the preceding.

6. Take of Camphor one drachm, Calcined Magnesia one drachm and a half, Nitre, Golden Seal, each, two drachms, Gum Arabic three drachms; mix together, in very fine powder, and add Powdered Cubebs one ounce and

a half, Balsam Copaiba enough to form a paste. The dose is the same as the preceding. This is much used in Cincinnati. I have the formula for many other mixtures which have been found efficacious, but the above will be more than sufficient to effect cures when skilfully employed. A physician informs me he has been very successful by the following mixture:—Take of Sulphur, Nitre, Alum, each, one-third of an ounce, Alcohol, water, each, one pint; mix. The dose is a table-spoonful three times a day. I have never used it. (See Compound Copaiba Mixture.)

From the difficulty, however, in procuring pure Copaiba, I have of late years dispensed with its use, and at present cure this disease without any internal medicine, save a purgative or two; using mild injections alone, and which have proved as beneficial as similar applications to an inflamed eye, or other mucous surface. The kind of injection, however, will depend on the stage of the disease, its peculiarity, and the influence produced upon it by the application; several are used, among which the following have been found the most efficient:—

1. Take of Chloride of Zinc from one to three grains, distilled water one fluidounce; mix. Inject a teaspoonful of this every six or eight hours, along the urethra. This may be used in any stage.

2. Take of Iodide of Zinc from one to three grains, distilled water one fluidounce; mix. Use as the preceding.

3. Take of Decoction of Golden Seal, Cold Infusion of Wild Cherry bark, each, one fluidounce and a half, Tannic Acid thirty grains, Sulphate of Morphia dissolved in the least quantity possible of Alcohol, five grains; mix. Inject a teaspoonful every four or six hours along the urethra.

4. Take of Decoction of Golden Seal one fluidounce, Sulphate of Zinc three grains; mix. Use as the preceding.

5. Take of Nitrate of Silver two grains, distilled water eight fluidounces; mix. Inject as the preceding, gradually increasing the strength as long as no irritation is produced.

Many other injections have been recommended, but I have found the above the best; the injection should always be used immediately after urinating, and the patient should not urinate afterward for at least half an hour; and a glass syringe should always be used in preference to a metallic one. In the female, the vagina and neighboring parts should be injected and bathed three or four times daily, with one of the above liquids.

In the treatment of gonorrhea, the patient should keep as quiet as possible, for exercise irritates the parts and keeps up the disease, rendering it more intractable to medicine.

When chordee attends, the following may be taken about an hour before bedtime; take Powdered Opium one or two grains, Camphor ten grains; mix for a dose. In cases where Opium disagrees, the following taken once or twice in the latter part of the day, will be useful:—Take of Extract of Hyoscyamus one scruple; Powdered Camphor half a drachm; mix, and divide into twelve pills. Two or three pills are to be taken for a dose. Lupulin, in doses of five or ten grains, and repeated occasionally, if necessary, has also proved serviceable. I have most generally overcome the tendency to chordee by having the patient rub the parts two or three times a day with the following liniment:—Take of Oil of Stillingia one fluidrachm, Oil of Lobelia half a fluidrachm, Tincture of Stramonium seed two fluidrachms, Olive Oil four fluidrachms; mix. Or, in its absence, the male organ may be enveloped in a poultice of equal parts of Lobelia and Stramonium leaves, to which a small quantity of Laudanum is added; and these will be found preferable to medicines by mouth.

After gonorrhea which has been accompanied by a severe and obstinate chordee is cured, there sometimes remains a contraction of the frœnum by which the penis is drawn down the same as in chordee, which may be termed chronic chordee; for this apply either of the following liniments over the parts, on a piece of lint, to be changed two or three times a day. 1. Take of Inspissated Juice of Conium Maculatum, or, Belladonna, one ounce, Oil of Stillingia two fluidrachms, Camphor, Laudanum, each, one ounce; mix, and thoroughly triturate together. 2. Take of Oil of Sassafras one fluidounce, Camphor one drachm, Opium one drachm, Iodine twenty grains; mix, and thoroughly triturate together.

If phymosis or paraphymosis attends, an operation is seldom necessary. Apply twice a day, over the swollen part, a warm fomentation of Stramonium leaves, Lobelia leaves, and Hops, equal parts. Sometimes it will be more beneficial to apply this fomentation cold, renewing it as often as it becomes warm. Leeches may also be applied, especially if the symptom appears to be obstinate. When either of these difficulties are of long-standing, the following astringent poultice applied two or three times a day will prove useful:—Take of Lobelia, Bayberry, Witch-Hazle bark and Bloodroot, each, in powder, equal parts; mix. To a table-spoonful of Powdered Elm bark add two teaspoonfuls of the above mixture and make a poultice. Phymosis requires more attention than paraphymosis, as it may conceal a phagedenic ulcer, which may prove serious.

If swelling of the testicle comes on, either during the disease or at any subsequent period, a poultice of Lobelia and Stramonium leaves may be applied to the parts, which should be held up in a suspensory bag, and the patient should exercise as little as possible; the poultice may be renewed two or three times a day.

When the glands in the groin enlarge, giving rise to sympathetic bubo, a complete disappearance of the indurated swelling can hardly be expected till the gonorrhea is cured or much abated. As these seldom suppurate, the patient should remain as still as possible, and keep the tumor constantly moistened with the following:—Take of Tincture of Conium Maculatum, water, each, one fluidounce, Muriate of Ammonia two drachms; mix and make a lotion.

Warty excrescences may be removed by applying the Nitrate of Silver to them daily; or, a Saturated Solution of Muriate of Ammonia; or, what has been found the most successful, powdered Savin leaves. When large they may be nipped off by a sharp scissors, applying Nitrate of Silver to the remaining cut surface. (See Warts.)

When gonorrhea has been improperly treated, and even in cases where proper treatment has been pursued, a chronic discharge, termed *gleet*, is very apt to follow, and which is occasionally very difficult to remove. It is often owing to a morbid irritation of the prostate gland. I have frequently cured gleet by the internal administration of formula No. 2, for the cure of gonorrhea, on page 317, together with an injection of the following preparation into the urethra, and even into the bladder, repeating it two or three times a day:—Take of Geranium two drachms, Bloodroot one drachm, boiling water half a pint; mix, and digest for some hours, and then add Sulphate of Zinc half a drachm. When this is dissolved, strain for use. A teaspoonful may be injected at a time; and if it act too severely dilute it with a small quantity of water. In some cases I have cured gleet by the following preparation;—Take of Tinctures of Blue Flag and Mandrake, each, seven fluidrachms, Saturated Tincture of Nux Vomica two fluidrachms; mix. The dose is from ten to fifteen drops, two or three times a day.

But the most efficient means I have ever employed, and suited to the greater number of cases, is as follows:—Take of Extract of Nux Vomica twelve grains, Sulphate of Quinia, Extract of Hyoscyamus, each, twenty-four grains; mix and divide into twenty-four pills. The dose is one or two pills three times a day, about an hour previous to each meal. In connection with this the following injection must be used:—Take of Strychnia two grains, strong Nitric Acid four drops, distilled water two fluidounces; mix. Inject a teaspoonful of this into the bladder, repeating it three times a day, after urinating, and retaining it in the bladder as long as possible; if too severe it may be diluted by the addition of more water. Stricture of the urethra will be treated of in a subsequent part of the work.

The diet in gonorrhea and gleet should be light but nutritious and easy of digestion, avoiding high-seasoned food, all kinds of acid food or drink, fat or greasy articles, salt, salted meats, saccharine articles of diet, and all intoxicating liquors; and the patient should keep as still as possible.

INFLAMMATORY RHEUMATISM.

THERE is considerable diversity of opinion among medical men as to the true character of rheumatism, some locating it in the fibrous or muscular tissues of the system, and other viewing it as an acute nervous disease; and there are strong reasons for considering this latter view the correct one, although it is not entirely in accordance with my own opinion. In this uncertainty concerning its true nature, I have deemed it better to treat of the disease among others of an *inflammatory* character, as has been generally done by authors, not only because of the accompanying symptoms of inflammation, but also the similarity in treatment. The disease is divided into two forms, the acute or inflammatory, and the chronic. Acute rheumatism is principally a disease of youth, rarely occurring after forty years of age, unless it has existed previously.

SYMPTOMS. Acute rheumatism may come on without any previous febrile symptoms, but more generally it is preceded with languor, chilliness succeeded by heat, thirst, anxiety, restlessness, and a full and quick pulse, seldom exceeding, however, 110 in the minute, the tongue is usually coated white, occasionally red or dry. Accompanying, or soon after these symptoms, a stiffness is felt in the muscles, with a sense of soreness, which is more or less speedily followed by excruciating pains in one or several parts of the

Fig. 23.



Varieties of Uric Acid Crystals.

body, particularly in the joints of the toes, ancles, knees, wrists, elbows, and shoulders. The pains shift about from one joint to the other, and are always accompanied with swelling of the part, redness, and extreme tenderness to the touch; this tenderness is frequently so great that the patient cannot even bear to have a person walk across the floor of his chamber. Sometimes the attack is confined to one joint or limb, but more generally it changes about, and the pain and swelling of one part may continue, or gradually subside, as the disease appears at another part. Frequently the heart or its covering is attacked, causing endocarditis, or pericarditis, and of which, delirium gives an ominous indication.

The bowels are generally costive, and the urine is scanty and high-colored, depositing a brickdust-colored sediment of uric acid. (See Fig. 23.) In the course of the disease there is often a profuse sweating, of an acid odor, which, however, affords no relief. Both the pain and febrile symptoms become more severe toward the evening, and abate considerably in the morning. The fever rarely lasts over two or three weeks, but the pain and swelling may continue for a much longer period. Throughout all the febrile disturbance there is no marked trouble of the stomach or bowels, no diarrhea, no petechiæ, no aphthæ, and no sordes about the mouth, nor does the fever have any tendency to degenerate into a typhoid condition.

The acute form of rheumatism may be translated to any part of the system, as the heart, lungs, diaphragm, liver, stomach, bowels, womb, &c. When the heart is attacked, there is acute pain over that region, with palpitation, difficult breathing, partial fainting, great anxiety, pale, distressed countenance, and delirium. When the brain is attacked, there is acute pain in the head, intolerance of light, a wild and anxious expression of the face, heaviness, and sometimes delirium. When the disease fastens upon the stomach, there is pain in its region, with nausea, vomiting, &c. And when these internal organs are attacked, the disease is liable to terminate fatally, unless prompt and efficient treatment be adopted.

When the symptoms are less severe in their character, the term *sub-acute rheumatism* has been applied to the disease. *Pleurodynia* is subacute rheumatism when located in the respiratory muscles; *lumbago*, when the muscles of the back are affected with it; *hemicrania*, when the scalp is its seat; and *sciatica*, when it attacks the neurilemma of the sciatic nerve. And these affections will require a treatment similar to that hereafter recommended.

DISCRIMINATION. The only disease with which inflammatory rheumatism is liable to be confounded is, gout. But gout is usually confined to one spot, attacks the smaller joints, comes on suddenly, is preceded by dyspeptic symptoms, has not a great increase of fever and pain at night, and concretions are formed about the small joints; whereas acute rheumatism is very changeable, is chiefly confined to the larger joints, comes on by a slow and gradual increase of the pain, is not preceded, necessarily, by symptoms of indigestion, and is worse at night.

Acute rheumatism has been divided by authors into the fibrous form and the synovial or diffused. In the *fibrous form*, the inflammatory symptoms run high, tongue thickly furred, pulse round, full, and bounding, profuse, acid, spontaneous perspirations, which exhaust the patient's strength without alleviating his suffering, urine acid, high-colored, depositing a copious brickdust sediment of uric acid. The inflammation usually commences in the immediate neighborhood of one of the larger joints, not *in* the joint, but *near* it. At first, there is much redness or swelling, but after the pain has been of some duration, there is a puffiness around the parts affected, and, at length, slight edema, or pitting on pressure, may supervene from effusion into the surrounding areolar tissue.

The *synovial or diffused form*, frequently termed "rheumatic gout," more frequently attacks the knee, or large joint of the great toe, the fever is either less intense from the beginning, or moderates soon after the joints begin to swell, the tongue is less coated, the patient sweats much less, the swelling of the joints, being the result of fulness and distension of the synovial membrane, is tight and elastic, and, as it were, protrudes through the spaces that intervene between the tendons and ligaments by which it is in other parts bound down and restrained. Fluctuation is also distinctly perceptible in the superficial joints. A most important difference between these

two forms, is that there is a greater tendency to settle upon the membranes of the heart in the fibrous than in the synovial form.

CAUSES. Acute rheumatism is said to be generally produced by an exposure to cold or damp, as by wearing damp clothing, lying in damp beds, or on cold and damp floors, or on the ground, &c.; but these exposures are frequently made, and to their fullest extent, without a subsequent attack of rheumatism. Beside, the disease frequently occurs without any exposure of this kind whatever. I have frequently seen it well developed in cases where the only previous apparent cause was the daily and continued use of alcoholic drinks in small doses, or, in other words, where the whole system was kept for a time in an irritable condition by constant tipping. I consider rheumatism to be a disease of the blood altogether, and probably of those constituents of it upon which the integrity of muscular tissues depends. Upon the approach of damp weather, the unhealthy muscles expand, and by pressing upon their accompanying nerves, produce more or less pain, according to the degree of pressure, as well as the degree of sensitiveness of these nerves; and as soon as clear, pleasant weather approaches, the muscles become reduced to their original size, the pressure upon the nerves is removed, and the patient is then free from pain, and comparatively well. But when, in addition to this peculiar tendency of the disease, the system is exposed to certain exciting causes, as cold, thereby increasing the debility of the parts attacked, and rendering them more sensitive to an attack when it does occur, the symptoms will be more or less severe and persistent, according to the degree of debility and sensitiveness effected by the exposure. Perhaps, this condition of the blood may be a diminution of some of its alkaline constituents, or an excess of its acid. It would be a very desirable matter to learn whether the injection of a small proportion of a Solution of Uric Acid, or of Lactic Acid, into the synovial fluid of the joints, would cause the active characteristic symptoms of acute rheumatism. The presence of lactic acid probably occasions rheumatism, while gout may depend upon excess of uric acid in the circulation. The pain, although generally looked upon as the disease itself, is only a symptom of it—the disease is located in the blood. A rheumatic pain may be produced by pressing with a finger upon that branch of the median nerve which lies between the knuckles of the second and third fingers; if the pressure be continued, a severe neuralgic pain will soon take place; and if the pressure be maintained sufficiently long, provided the person can sustain it, the pain gradually ceases, a sensation of numbness will follow, and a subsequent paralysis, which will require several days to thoroughly remove. A similar effect is produced when persons accidentally hit the elbow on some prominent object, in which the ulnar nerve is suddenly pressed, pain is produced, and frequently a slight paralysis for a few minutes. And it will be found that these results will be more readily and severely experienced by individuals who are disposed to rheumatism.

TREATMENT. The great difficulty in curing rheumatism in any of its forms, lies in the fact that patients instead of pursuing a curative course of treatment, turn all their attention to a removal of one of its symptoms, *pain*, and when this is accomplished, all further medication is dispensed with, until a second exposure is followed by a second attack of pain, when this is again energetically treated, and removed; and this course persisted in for several times, ultimately produces such a condition of the tissues and parts attacked, as to render a permanent cure entirely out of the question. Rheumatism is as curable a disease as any other, but to effect this result, not only must a treatment be adopted to relieve the pain produced by it,

but likewise to remove the condition of the fluids of the system upon which it depends. I would call the attention of both the profession and the public, to the above views concerning this disease, which, as far as I am aware, have never before been presented to them.

In the cure of inflammatory rheumatism, the indications of treatment are two-fold: firstly, to relieve the pain and suffering during an attack; and secondly, to make use of means subsequently, in order to prevent any further attacks, or, in other words, to remove that condition of the blood which occasions the disease.

During an acute attack of rheumatism, the first thing to be effected is the production of a copious perspiration; for which purpose, the Spirit vapor bath may be used, or, if the condition of the patient is such that he cannot employ this, the Compound Tincture of Virginia Snakeroot, may be given in some warm infusion of Pleurisy root, or Crawley, and continued until free sweating is induced. But the sweating should not be continued too long, as it will relax the skin, and occasion great exhaustion, neither of which are desirable. In the meantime, the bowels should be acted upon by an active cathartic, as the Compound Powder of Jalap, or the Compound Powder of Leptandrin; and the cathartic may be repeated every day for two or three days in succession. Over the painful and swollen joints, warm or cold fomentations, according to the influence exerted by the degree of temperature, should be applied, as of Hops and Lobelia, Hops and Cicuta leaves, or Hops and Stramonium leaves, &c., and the water used in preparing the fomentations should be slightly alkaline, or a weak ley water. But the best application that I have ever used, is the fresh leaves of Stramonium pounded, bruised, moistened with a little water, and applied over the parts, renewing it three or four times a day. In some very violent cases in which I have employed this agent, the pain has ceased in fifteen minutes from its application, but its use requires to be continued for a considerable time, else the pain will return. In the absence of the recent leaves, an inspissated juice of them may be used, or the articles named above. Beside these, it will be proper to apply a Mustard poultice along the whole course of the spinal column, and, in very violent cases, Firing should be employed, (See Part III.,) especially over those portions of the spinal column which are very painful on pressure. Liniments are of no service, and should not be used.

Internally, the best remedy to overcome the peculiar condition of the blood, which disposes to the disease, is a mixture of equal parts of the Tincture of Black Cohosh root, and the Tincture of Colchicum seeds, of which from ten to sixty drops may be administered, as circumstances indicate, every one, two, or three hours. During the severity of the symptoms, which are apt to occur in the latter part of the day, from three to eight drops of the Tincture of Aconite root may be added to each dose; and during the remissions, which usually occur in the early part of the day, the Aconite should be omitted, substituting for it a grain or two of Sulphate of Quinia to each dose. And this course should be pursued daily as long as the inflammatory symptoms remain, which may be from ten days to four or eight weeks; more generally, however, the disease will yield in from five to twelve days.

Other agents have been advised for the above purpose, and which may occasionally be found useful, as:—1. Take of Tincture of Black Cohosh root two fluidounces, Saturated Tincture of Nux Vomica one fluidounce; mix. The dose is from twenty to forty drops, three or four times a day, according to the influence produced: this is a good preparation, but should be used with great care.

2. Take of recent White Hellebore root six ounces, Opium half an ounce, Alcohol one pint; add the articles together, macerate for fourteen days, and filter. The dose is from ten to sixty drops, three or four times a day, sufficient to affect the head without producing nausea.

3. Take of Saturated Tincture of Rhus Toxicodendron half a fluidounce, Tincture of Aconite root two fluidrachms, Volatile Tincture of Guaiacum two fluidrachms; mix. The dose is thirty or forty drops every three or four hours.

4. Take of Nitre five grains, Opium, Ipecacuanha, each, one grain; mix for a dose, to be repeated every two or three hours. Administer an alkaline purgative, and apply dry wool to the affected joints.

5. When called upon to treat the first attack of acute rheumatism, administer a sufficient quantity of the Tincture of Black Cohosh, (from three to sixty drops,) every two hours, night and day, until the head becomes affected; then lengthen the intervals between the doses to three, four, or six hours, sufficient to keep up the action on the brain, and which action must be continued for not less than seven days, or until the disease is completely removed. It changes the rheumatic diathesis, so that a second acute attack will rarely occur.

In connection with the above measures, diuretic infusions must be drunk freely through the inflammatory stage; as of Cleavers, Haircap Moss, Burdock seed, Wild Carrot, &c. Lemonade has been recommended as a drink, or even Lemon juice, but although occasional benefit may ensue from it, I do not place confidence in it as a curative agent.

During the acute stage, the patient must be kept quiet, and in the recumbent position; the atmosphere of the room which he occupies, should be uniformly maintained at a moderate temperature, and his diet must be very light, as barley-water, toast-water, thin gruel, &c. When one of the internal organs becomes attacked, the Compound Tincture of Virginia Snake-root should be given every ten or fifteen minutes in teaspoonful doses, until free perspiration, followed by relief, is obtained.

When the pain and inflammatory symptoms have subsided, the diet must be more nutritious, as soft-boiled eggs, bread, biscuit, fowls, &c., returning gradually to the ordinary diet. All fats, acids, and every thing that will cause acidity of stomach, or flatulence, and all stimulants, especially liquors of all kinds, whether cider, vinous, malt, or spirituous, must positively be avoided. The surface of the body must be rubbed once or twice a day with a coarse towel, using sufficient friction to cause an agreeable glow of heat, and the patient should use moderate exercise, both within doors and in the open air, being extremely careful, however, not to fatigue himself, and to avoid all exposures which may excite a new attack. Any stiffness or swelling which may remain, may be overcome by one of the following applications:—Take of Muriate of Ammonia two drachms, distilled water one fluidounce; dissolve the Ammonia in the water, and add Tincture of Hemlock one fluidounce. The parts may be bathed with this several times a day, or lint may be moistened with it, and applied over the parts, renewing the application several times a day. Or the Compound Plaster of Belladonna may be applied.

In order to make a thorough and permanent cure of the disease, not only must the preceding hygienic measures be rigidly attended to, but the subsequent remedial means should be perseveringly employed, and which will require to be continued for one or two years, depending, however, upon the natural resisting powers of the organ to disease, and other conditions and circumstances. The mixture of the tinctures of Black Cohosh

and Colchicum seed, above referred to, should be taken three times every day, in doses of from half a teaspoonful to a teaspoonful. And in addition to this the Compound Syrup of Stillingia with the Iodide of Potassium added, in the proportion of one ounce of the Iodide to each pint of the Syrup, should likewise be taken daily in teaspoonful doses. And, if necessary, other measures, named in the treatment of chronic rheumatism may be pursued.

The following have been recommended for acute rheumatism, after the subsidence of the inflammatory symptoms: 1. Take of powdered Guaiacum, Nitre, each, one drachm, Ipecacuanha three grains, Opium two grains; mix, and divide into six powders. The dose is one powder in jelly or molasses, to be repeated every three hours, and continued for some days. 2. Take of decoction of Peruvian bark one ounce and a half, dissolve in it Nitre twelve grains, for a dose, to be repeated every four hours. 3. Take of the dried Inspissated Juice of Poke berries, White Pine pitch, each twenty grains, Cimicifugin, ten grains; mix, and divide into twenty pills, one of which may be given every four hours. In the synovial form of rheumatism known as gouty rheumatism, I have derived excellent results by the intermittent application over the affected part, of the Compound Tar plaster, maintaining the discharge each time, as long as the patient can bear it, together with the internal use of the Stillingia syrup as above. An ice poultice, referred to in gout, will frequently be found serviceable in allaying the paroxysm of pain.

CHRONIC RHEUMATISM.

CHRONIC RHEUMATISM may follow as the sequel to an acute attack, but it is more frequently found to exist entirely independent of any previous inflammation. It differs from the acute form in being seldom accompanied with any marked febrile symptoms. It is a very tedious and obstinate disease to cure, on account of the inattention bestowed upon it, during the absence of actual suffering; but when early and properly attended to, is as readily curable as most maladies.

SYMPTOMS. The pains in chronic rheumatism are usually confined to the large joints, most frequently to the hips, loins, knees, ankles, shoulders, &c., though every joint is liable to suffer; and the pain may be confined to one particular part, or may shift from one joint to another, being at one time in the head, at another in the knees, wrists, fingers, or shoulders, &c.; and this shifting is more especially present in those cases accompanied with a slight degree of inflammation. The pain is generally worse at night, commencing on going to bed, while that occasioned by syphilis or mercury, begins at from three to five o'clock in the afternoon, and is seated in the long or flat bones. Some persons are hardly ever free from pain, while others suffer only on the approach of cold or damp weather, or from improper exposures. The joints are usually swollen but not to that extent as in the acute form, and the skin is not attended with the redness of the inflammatory variety, but is pale, cold, and stiff, and cannot easily be made to sweat. When the patient remains at rest for a short time, he will experience pain and stiffness in the affected part on attempting to move it; but, on exercising until the body becomes warm, both the pain and stiffness disappear. The pulse is generally quick and tense, more particularly toward night; the appetite more or less impaired; urine variable; bowels irregular; with a tendency to coldness of the hands and feet, numbness of the

limbs, and not unfrequently, a partial impotency. When chronic rheumatism is permitted to progress without attempting a permanent cure, it causes organic disease of the tendons, permanent stiffness of the joints, and a wasting and hardening of the muscular structure about the parts, with considerable deformity. Sometimes there is an effusion of a jelly-like substance in the cavity of the affected joints. But these results rarely follow an early and proper treatment of the disease.

CAUSES. The causes of chronic rheumatism are the same as those which produce the acute species.

TREATMENT. This is divided into, firstly, palliative means to remove the pain, and secondly, constitutional remedies to prevent a return of the pain, and ultimately cure the disease; and without a proper attention to these, a permanent cure cannot be expected.

To remove the pain and stiffness of the limb or part affected, it will be proper to attend to the condition of the stomach and bowels, commencing the treatment with a mild laxative should the bowels be constipated. After the operation, a Spirit vapor bath should be used, and the patient be permitted to perspire freely, at the same time applying Mustard along the whole course of the spinal column. However, these measures will not be required, unless febrile symptoms are present, in a minor degree.

Ordinarily, if the pain and stiffness cannot be removed by rubbing the parts, and by exercising them; or, if exercise should increase the pain, much benefit may be derived by exposing the part to the vapor of hot water until a perspiration is induced; this should be continued for half an hour or an hour, when the parts should be thoroughly dried, and some stimulant applied, as the Compound Tincture of Camphor. Shampooing the diseased parts, according to the practice of the eastern nations, will be found a very valuable mode of stimulating and exercising them, and may be put into operation while the stimulating tincture or liniment is being applied. In many instances, water, at 100° F., poured from the spout of a tea-kettle or other vessel at a height of four or five feet, upon an affected joint, and continued for two or four minutes, followed by thorough friction with some stimulating liniment, together with gentle movement of the joint, will frequently be found decidedly beneficial.—*I. G. Jones.*

After the pain is removed, the above stimulating tincture, or some other similar preparation should be applied two or three times, daily, to the parts, and a current of the electro-magnetic fluid should likewise be passed through them, continuing it for fifteen or twenty minutes each day. Electro-magnetism, although of great value in the treatment of many chronic diseases, will rarely be found to effect a permanent cure, unless the proper medicinal agents be administered in connection with it, when, it will greatly facilitate the cure. I have known many persons to rely solely on electro-magnetism in certain maladies, and become apparently well, but as soon as they ceased its use the affection gradually returned. Proper remedies must always be employed with it, if permanence of recovery is desired. Firing, over the diseased joints, and over those parts along the spinal column which are tender on pressure, will likewise be found a valuable mode of stimulation and counter-irritation.

The bowels must be kept regular daily, by the administration of a mixture of Rhubarb two parts, and Bicarbonate of Potassa one part; and which must be given in doses varying from three to twelve grains, or, sufficient to produce one natural evacuation daily, and which dose must be repeated three times a day. The constitutional treatment will require to be pursued perseveringly for many months, perhaps for a year or two, and

it will vary much, depending on the individual's temperament. The following are among the best preparations with which I have effected permanent cures:—

1. Take of Black Cohosh root, Prickly-Ash berries, Pipsissiway, and Sassafras bark, each, one ounce, good French Brandy four pints. Macerate the drugs, coarsely powdered, in the Brandy for fourteen days. The dose is a table-spoonful in a wineglassful of sweetened water, and which may be repeated three times a day.

2. Take of Twin leaf, Black Cohosh, Poke berries, Resin of Guaiacum, Prickly-Ash bark, each, one ounce, good French Brandy four pints. Macerate the drugs, coarsely powdered, in the Brandy for fourteen days. The dose is the same as in the preceding.

3. Take of Blue Flag, Poke berries, Prickly-Ash bark, and Black Cohosh, each, one ounce, good French Brandy four pints. Prepare and use as the preceding, being careful in all instances to lessen the dose if it prove too active.

4. Take of Alcoholic Extract of Black Cohosh, Alcoholic Extract of Blue Flag, Extract of Poke, each, one drachm, Guaiacum in powder, sufficient to form with the above a pill mass. Divide into four grain pills, and administer one every three or four hours daily.

5. Take of Compound Syrup of Stillingia twelve fluidounces, Tincture of Black Cohosh four fluidounces, Iodide of Potassium one ounce; mix. The dose is one or two teaspoonfuls in half a gill of water, to be repeated three times a day.

6. Melt and strain White Gum Turpentine one ounce, and add to it powdered Guaiacum and Inspissated Juice of Poke berry, of each, one ounce. Divide into three or four grain pills, and administer one pill every hour or two.

Many other agents could be named, but the above will be found sufficient to meet nearly all cases which may be met with. A very excellent agent, and one which I have used extensively in the ordinary forms of chronic rheumatism is made as follows:—Take of Cimicifugin, Xanthoxylin, and Apocynin, each, one drachm, Whisky or good Gin one pint. Mix the articles in the liquor, and then dissolve them. The dose is a table-spoonful, repeated three times a day, or a sufficient quantity to keep the head very slightly affected.

In warm weather, rheumatic patients should wear silk next the skin, and in cold weather, flannel. The whole surface of the body should be frequently bathed with a weak alkaline bath, and the Spirit vapor bath should be taken every two or three weeks. The body should always be kept comfortably clad, and much care is necessary to guard against cold, and dampness. Exercise should be taken daily, but never carried to fatigue, and the diet should be light and nutritious, avoiding acids, fats, and vinous and malt liquors, or the same as is recommended after convalescence from the acute form. The above treatment is applicable also to *Lumbago* and *Sciatica*.

Before closing this subject, it may be well to refer to several compounds which have been highly recommended as local applications in chronic rheumatism.

1. Take of Oil of Hemlock, Oil of Tar, Oil of Sassafras, Pyroligneous Acid, Alcohol, Aqua Ammonia FFF, each, one fluidounce; mix for a liniment.

2. Olive Oil, Oil of Turpentine, Oil of Peppermint, Laudanum, Alcohol, Aqua Ammonia FFF, each, one fluidounce; mix, for a liniment.

3. Oil of Origanum, Oil of Hemlock, Oil of Cajeput, Camphor, of each, one pound, Capsicum, half a pound; mix, digest for two weeks, and filter.

4. The Compound Liniment of Oil of Amber.

5. For that form of chronic rheumatism connected with a syphilitic taint, the following will be found valuable as a constitutional remedy; take of Blue Flag, Prickly-Ash bark, Poke, Stillingia, each, one ounce, Sheep Laurel leaves, Stramonium seed, each, three drachms. Pour on these articles in coarse powder, two pints of boiling water, and when cold add two pints of Whisky, two pounds of white sugar, and four ounces of Iodide of Potassium. Allow the articles to digest for ten or twelve days, when the preparation will be ready for use. The dose is from a teaspoonful to a table-spoonful, three or four times a day. I have recently cured several cases of rheumatism, (in which the urine was devoid of earthy salts but contained an abundance of Urate of Ammonia,) by the administration of diluted Nitric Acid internally, together with the exhibition of Nitrate of Iron as a tonic.

GOUT, OR PODAGRA.

ALTHOUGH this affection is not strictly an inflammatory disease, yet I have placed it in this relation, for reasons similar to those given for rheumatism. Gout generally attacks men, and especially those of sedentary and indolent habits, who live generously, using freely of animal food, rich sauces, wines, malt liquors, &c. Occasionally it is met with among females. Three varieties of gout have been described, viz., the acute, chronic, and nervous.

SYMPTOMS. An attack of acute (or regular) gout sometimes comes on suddenly, without any premonitory indications, but most commonly it is preceded by indigestion, drowsiness, flatulence, headache, nausea, an unusual coldness of the feet and legs, a suppression of perspiration in them, numbness, or a pricking sensation along the whole of the lower limbs, great lassitude, constipation, and pale urine. Patients frequently complain of a feeling as if something cold were moving along the thigh downward, sometimes comparing it to water, at other times to wind, &c. The paroxysm usually comes on during the sleeping hours, but more frequently from one to four o'clock in the morning, with a most acute and tearing pain in the great toe, the heel, calf of the leg, or perhaps, the whole of the foot; but the ball or first joint of the great toe is the part more frequently attacked. The pain continues to increase in violence, causing a sensation as if the parts were dislocated, and, at the same time, were having boiling water poured upon them. Cold shiverings are felt from the commencement of the pain, the parts become swollen, hot, and red, with more or less severe throbbing, and the least motion augments the pain. The patient becomes exceedingly restless, the pulse is full, hard, and frequent, and the skin dry and hot. In about six or eight hours there is a remission, the symptoms diminish in severity, except the swelling, which continues, a gentle sweat breaks out, and the patient obtains some sleep; but about the same time on the succeeding evening as that in which the first attack occurred, the paroxysm is renewed, with more or less violence, and continues in this manner, having remissions and renewed paroxysms for several days or weeks in succession; more commonly, about fourteen days. Finally, the redness and swelling abate, the paroxysms become milder, and the disease goes off either by perspiration, copious discharge of lateritious urine, or diarrhea; an itching of the parts takes place, and the scarf-skin covering them peels off in branny scales. The patient is generally left with some lameness and soreness for a length of time, but his appetite and spirits are much improved.

The disease sometimes attacks the other foot, after leaving the first, and, in some cases, it attacks both feet at the same time. At first, two or three years may elapse before a second attack is experienced, depending considerably on the habits and constitutional vigor of the person, but if allowed to continue, it ultimately becomes more frequent, the paroxysms recurring at intervals of from one to three months, the disease becoming habitual and chronic. When gout continues for any length of time, a stiffness and swelling of the joints takes place, the limbs become painful and crippled, and deposits of urate of soda take place in the joints as well as in the fingers, and to which the term "chalky concretions," has been applied; these concretions form small, hard swellings, termed "nodosities."

When the gout suddenly leaves a joint, and is translated to some internal part, it is termed *retrocedent* or *repelled* gout. When it falls on the stomach, it occasions nausea, vomiting, coldness in the region of the stomach, violent cramp-like pains, &c., and patients have died in a few minutes after such an attack; when on the heart, severe pain in that region, with palpitation, difficult breathing, and faintings; when on the lungs, asthmatic symptoms; and when it is translated to the head, delirium, headache, coma, apoplexy, or palsy, are the results.

Chronic or *irregular* gout is generally a consequence of the acute; there are no febrile symptoms, but the parts become stiff, purplish, and edematous. It may also assume the retrocedent form. Chronic gout is the disease of a degenerated or impaired constitution, and although absolutely incurable by any of the means at present known, it may be materially benefited by a proper attention to hygienic measures. In this form the patient is subject to symptoms of a disordered digestion, with more or less depression of spirits and irritability of temper.

Nervous gout is peculiar to nervous persons, and those gouty individuals who have become somewhat careful in their habits; and it has been frequently confounded with neuralgia. The pain is dull or lancinating, limited to a single joint or shifting, and often occasions dyspepsia, troublesome cough, difficult breathing, palpitation of the heart, &c. Like the other forms it may occasion death by a sudden translation to some internal organ.

CAUSES. Gout is owing to an excess of uric acid in the blood, the result probably of some defect in the depurative function of the kidneys, or, perhaps, a fault of assimilation, either primary, secondary, or both. It may be excited into action, by exposure to cold and damp, long want of rest, violent mental emotions, improper diet, free use of acid wines or fermented liquors, all excesses, constipation, accumulation of acidity in the stomach, sedentary and studious habits, severe or violent exercise, &c., but more especially by an indolent or sedentary mode of life conjoined with luxurious diet.

DISCRIMINATION. Gout may be determined from rheumatism, by observing that rheumatism principally occurs among young persons, or middle-aged, while gout chiefly selects the elderly; rheumatism occupies the larger joints, and is very liable to shift, gout seizes the smaller joints, especially those of the feet and hands, and is not so apt to change about; rheumatism is seldom preceded by dyspeptic symptoms, gout almost invariably; besides, in gout the pain is more like burning or scalding sensation, and the parts are more swollen and red than in rheumatism. The profuse acid perspirations so common in acute rheumatism are seldom observed in gout.

TREATMENT. This will be divided into that which is proper during the attack, to relieve it, and that which is applicable to the intervals, to prevent a return of the paroxysm.

The treatment during the paroxysm, will consist of measures to lessen the

pain and inflammation, for which purpose, the patient should be placed at once upon a light diet, being careful, however, not to withdraw stimuli too suddenly from those who have been greatly accustomed to it. The foot attacked must be exposed to the action of vapor of water for some time, say half an hour, after which, tepid water should be applied, keeping the parts constantly moistened, by a sponge or wet cloths, and renewing as often as they become dry; this will produce a safe and powerful refrigerating influence.

Frequently much relief may be obtained by placing the foot in tepid weak ley water, and holding it there for fifteen or twenty minutes, and afterward applying a poultice of recent Stramonium leaves bruised, and moistened with the tepid weak ley. Or, a fomentation of Stramonium leaves, Hops, and Lobelia, in weak ley water, may be applied tepid, renewing it before it becomes dry. Liniments are entirely useless, unless indeed the following be found of service:—Take of Laudanum one fluidounce, Oil of Lobelia half a fluidounce, Neat's Foot Oil, and Spirits of Hartshorn, each, two fluidounces; mix. This may be carefully rubbed upon the part, or, it may be applied on a piece of flannel to the affected joint. In cases of chronic Gout, where there is no tendency to a shifting of the disease, I have derived more immediate and permanent benefit from an ice poultice than anything else; the ice is to be finely pounded; loosely put into a thin bag, and placed around the painful joint, where it may remain for a few minutes, being careful not to allow it to freeze the parts. Several individuals who used it according to my directions a year or two since, have not yet had a return of the paroxysm, which occurred previously every three or four months. And I would also remark that a permanent discharge kept up from the affected part, by the Compound Tar plaster, has in several instances wrought the most happy effects.

Internally, some preparation of Colchicum should be administered, as this agent has the power of augmenting the quantity of urea and uric acid in the urine, and thus conveying it from the blood. The Tincture of Colchicum seed may be administered in doses of from thirty to sixty drops, every three or four hours, after having first thoroughly evacuated the bowels by a combination of Podophyllin one or two grains, Cream of Tartar half a drachm. Should the Colchicum produce much nausea, or much irritation of the bowels, the quantity should be reduced; and its use should be continued until the paroxysm is subdued. The Colchicum may also be administered in conjunction with other agents which will render the uric acid and urate of soda more soluble, thus:—

1. Take of Tincture of Colchicum seed one fluidounce, distilled water two fluidounces, Iodide of Potassium one drachm; mix. The dose is a teaspoonful every two or three hours.

2. Take of Tincture of Colchicum seed one fluidounce, Liquor Potassa one fluidounce; mix. The dose is a teaspoonful every three or four hours, in some sweetened water, or some aromatic infusion.

Particular attention should be paid to the kidneys, keeping up a free urinary discharge by means of diuretic infusions with Cream of Tartar. Infusion of Trailing Arbutus, of Dwarf Elder bark, or of Wild Carrot root, may be used freely; and the Cream of Tartar may be given in doses of ten grains every hour or two. A concentrated decoction of the root and tops of Rest-harrow (*Ononis Spinosa*, or, *O. Arvensis*,) will be found powerfully diuretic. Regular action of the bowels should likewise be obtained by the exhibition of Podophyllin, or the Compound Powder of Jalap; and any existing acidity of the stomach must at once be corrected by the use of a solution of Bicarbonate of Potassa, in table-spoonful doses every hour.

To secure rest and ease from pain, the Compound Powder of Ipecacuanha and Opium may be given; or the Sulphate or Acetate of Morphia may be exhibited in quarter-grain or half-grain doses every one, two, or three hours, until sleep and quiet is produced. When opiates disagree, Hyoscyamus may be substituted.

When the disease suddenly attacks the stomach, heart, &c., place the feet immediately in strong hot mustard water, apply stimulants and Mustard along the whole course of the spinal column, and administer internally full doses of the Compound Tincture of Virginia Snakeroot, or other stimulating diaphoretic, repeating it every ten or twenty minutes, until relief is obtained, and the disease has returned to its original location. After which the bowels should be evacuated by a moderate cathartic.

After the paroxysm of gout has disappeared, the only chance for preventing a renewal of it lies in the persistence of proper hygienic measures, for, after a few attacks, it is very difficult to obtain a permanency of cure, and, in long standing cases, more or less of its symptoms will be present occasionally, whatever course is pursued. The principal means by which to effect a thorough cure, are exercise, temperance, and a spare regimen. A gradual approach must be made to a frugal and temperate style of living, moderate and regular exercise should be taken daily, late night hours must be avoided as well as heavy suppers. The surface of the body must be attended to, by frequent bathings with a weak alkaline solution, and an occasional Spirit vapor bath; the bowels should be kept regular by mild aperients, as the Compound Powder of Rhubarb, and Bicarbonate of Potassa heretofore spoken of; and to facilitate the cure, some tonic or strengthening preparation, in which no liquor enters, should be constantly and regularly used. All idle, indolent, sensual, and intemperate habits must be abandoned. Gout is the disease of the glutton, the sensualist, the intemperate, and the fool.

DROPSICAL DISEASES.

DROPSY is the morbid accumulation of a serous or watery fluid in several parts of the body, which impedes or prevents the functions of the organs in its vicinity. It is occasioned by a decrease of absorption, or an augmented effusion, or both combined, and is merely symptomatic of some present or previous disease; thus peritoneal inflammation is often followed by a dropsical effusion; pleurisy often terminates in dropsy of the chest, and inflammation of the brain of a child, frequently terminates in dropsy of the brain. It likewise follows as the result of all those causes which create debility in various organs.

DROPSY OF THE BRAIN.

ACUTE Hydrocephalus or Dropsy of the Brain, is not a primary disease, but is the result of a peculiar inflammation of the brain, to which the terms "meningitis," and "tuberculous meningitis" have been appropriately applied. It is peculiar to children, being quite frequent during the first six years of life, but rarely occurring after the twelfth or fourteenth year; and appears to be more frequently, if not entirely met with among those of a scrofulous habit. It is of much importance that the premonitory symptoms be attended to, for it is only during the early period of the disease, that we can hope for any favorable results from medication.

SYMPTOMS. There may be three stages to the disease, viz:—the formative stage, the stage of excitement or inflammation, and that of effusion. The formative period may be entirely absent, but when present, it may be known by the child losing his cheerfulness and spirits, exhibiting a distaste for his usual enjoyments; there will be more or less headache, frequent knitting of the eyebrows, occasional deep-drawn sighings, grinding of the teeth, a lack of luster of the eye, with a pale or collapsed appearance of the face. Disturbed rest at night, with sudden startings from sleep in alarm, or with a scream, should always awaken a suspicion of the disease, especially when the appetite is good, the tongue clean, no worms present, and the evacuations from the bowels healthy.

As the disease progresses, the appetite becomes impaired, the bowels constipated, there is more weakness in one leg than in the other, the temper is irritable, headache is complained of, or if too young to express its sensations, the hands are raised to the head, with pain in the bowels, irregular pulse, febrile symptoms, unpleasant smell of the breath, vomiting, especially on moving the child, tenderness of the abdomen on pressure, which is not tumid but concave, and the urine is scanty and frequently voided. All the senses are at first morbidly acute, but gradually lose their power, as effusion takes place.

More commonly, however, the disease is manifested suddenly, with obstinate vomiting, high fever, thirst, heat of the surface and especially of the head, face pale and alternating with flushes, throbbing of the temporal arteries, redness of the eyes, quick pulse, aversion to light and sound, and severe pain in the head, which, if the child is too young to complain, it manifests by clasping its head, or constantly raising its hand to that part; the head is either rolled about incessantly, or the child lies still, heavy, and dull, with an occasional cry of pain. The appetite is lost, the bowels constipated, the urine scanty and high-colored, and the breathing hurried unequal, and irregular. The pupil of the eye is more commonly contracted during the early period of the disease, and in some instances the child occasionally utters a sudden cry or scream without any obvious cause. Sometimes a convulsion is the first symptom of the disease. Frequently, toward the termination of this stage, delirium ensues, with spasmodic or tetanic contractions of the muscles of the head and trunk, also dilatation of the pupils, with squinting, and the pulse becomes slow.

The stage of effusion may be preceded by a sleep, or an apparent transitory improvement of all the symptoms, which, however, are delusive. The delirium subsides, or occurs occasionally, the pupil of the eye is permanently dilated, and ceases to contract on the approach of light, the eye is rolled about, turned upward, or squints, the pulse becomes quick, irregular, and weak, the child falls into a state of stupor, from time to time, and more frequently than in the previous stage, a sharp, piercing, agonizing scream is uttered, the result of pressure upon some particular portion of the brain, and there is an almost constant moaning. Swallowing is difficult; in some cases the head is permanently bent back; and paralysis of a hand, arm, or leg may take place. The child lies quiet, occasionally moving the head, or throwing about a limb unconsciously, the eyes are usually half closed, exhibiting a glazed appearance, with mucus at the corner of the eyelids, the bowels are evacuated unconsciously, and the disease terminates by a convulsion or in coma. The disease may last from two days to two months; three weeks is the average duration.

The symptoms will, in each stage, be found to vary considerably, and even the appearance and progress of the several stages themselves may

differ materially from that which has been stated. Sometimes the pulse does not become slow during the whole course of the disease, and occasionally the dilation or contraction of the pupil will not be permanent; and sometimes the senses will remain perfect to the last moment. At times, the attack comes on suddenly, with convulsions, or a comatose condition, the head bent back, squinting, &c., and terminates fatally in a short time notwithstanding that prompt, vigorous, and appropriate means have been pursued.

CAUSES. Acute Hydrocephalus is an affection which has been observed to pervade families, affecting all or the greater part of the children at a certain period of their life; and those of a scrofulous or strumous habit appear to be more especially liable to it. The exciting causes which have induced the inflammation terminating in this disease, are, unhealthy milk or food, mental distress in the nurse, prolonged suckling, the sudden suppression of an eruption on the head, or behind the ears, recession of febrile eruptive diseases, falls or blows on the head, dentition, cold, fright, and indigestible substances taken into the stomach. And in some cases it has occurred without any assignable cause.

Hydrocephalus may be *discriminated* from apoplexy by its being attended with high febrile symptoms, which are absent in this latter disease. From typhus by the very irregular paroxysms, with complete intermissions, which occur several times a day. From infantile remittent fever, by its irregular paroxysms, and dark-greenish mucous discharges, while in the infantile febrile affection the feverish symptoms and the remissions are regular in their appearance, and the discharges are of a deep-brown color, and very offensive.

PROGNOSIS. This is always unfavorable, especially if the first stage be neglected. If tranquil sleep occurs, with a diminution of the startings, the pulse becoming slower, the eyes more steady and less sensitive to light, and the expression of the face more natural and calm, these are favorable signs; while the rapid, small pulse, quick, irregular respiration, dry, furred tongue, livid face, increase of the startings and twitchings, disturbed sleep, wakefulness or coma, all indicate a fatal termination. It has, however, frequently been the case, that where headache, stupor, dilated pupils, squinting, &c., have been present, the children have recovered by prompt and energetic treatment; and this fact may lead us not to despair too soon, or cease to employ further remedial measures.

TREATMENT. The indications of treatment are to subdue inflammatory action, and thereby prevent effusion; or, when effusion has taken place, to excite the absorbents to remove it. To fulfil the first indication, the treatment must be commenced with an active hydragogue cathartic, for which purpose a dose of the Compound Powder of Jalap, to which an equal quantity of Cream of Tartar is added, may be given, and which should be repeated every hour or two, until it causes a profuse discharge from the bowels, of a watery character. Or, Podophyllin one grain, Leptandrin two grains, Cream of Tartar one drachm, may be rubbed together and divided into six or eight powders, according to the age of the child, and a powder may be administered every two or three hours. In recent and very violent cases the Hydragogue may be repeated every day, but in mild cases, or when protracted, their repetition every two or three days will be sufficient. As a constant drink, the following should be given to the child: Take of Hair-cap moss two ounces, Dwarf Elder bark, Juniper berries, each, one ounce; mix, and make a strong infusion. From half a table-spoonful to a table-spoonful at least, should be given every hour.

Great attention must also be paid to the condition of the skin, using means to arouse the cutaneous capillaries from their languid and inactive condition. The whole surface should be bathed daily with an alkaline, or salt-water bath, repeating it three or four times a day, and drying with considerable friction. When the inflammatory symptoms are violent, and are not promptly mitigated by the above measures, advantage will frequently be derived from the use of sudorifics, producing a free perspiration. When the condition of the child will allow, the Spirit vapor bath may be used, but under other circumstances, the Compound Tincture of Virginia Snakeroot may be exhibited in an infusion of Spearmint, or Crawley root. Some practitioners have derived much benefit from Nitre, dissolved in an infusion of Crawley root, the quantity being according to the age and condition of the patient.

To relieve the heat, pain, and inflammation in the head, a mixture of equal parts of Whisky, Vinegar, and rain-water, to a pint of which a table-spoonful of Salt has been added, may be applied to the head by means of cloths wet with the mixture, and this should be constantly pursued and frequently renewed. In some cases it will be found that more benefit will ensue from its use when tepid, than when cold. But I have found the greatest advantages from the application of a powerful fomentation of Hops and Stramonium leaves to the head, which is usually followed by a diminution of the great excitement or delirium present, causing a relaxed condition of the system throughout, and followed by sweating, urination, and other symptoms of improvement. The fomentation must be renewed before it becomes dry.

Mustard applied to the feet and legs, and along the whole course of the spinal column, will not only exert a favorable influence as a counter-irritant, but will aid in lessening the tendency to vomiting which is generally present; and in addition to this, an infusion of Spearmint will be found efficacious, as it has a tendency to allay any irritability of the stomach. Stimulating liniments containing a portion of the Tincture of Stramonium seed, will be serviceable, applied along the spinal column.

Occasionally, from acidity of the stomach, there will be a diarrhea, which may be removed by the Compound Syrup of Rhubarb and Potassa.

The child should be kept in a state of quiet and rest, avoiding all possible sources of irritation; the room should be darkened, the gums should be cut if teething is in process, and if there be the slightest suspicion that the nurse's milk does not agree with it, a change must be made. The diet should be light, consisting principally of arrowroot, gruel, panada, milk, &c., and if it cannot be taken by mouth, it may be given by way of injection. Toward the decline of the inflammation, a solution of the Iodide of Potassium may be advantageously given. I have, in many cases, found the inflammatory symptoms to promptly yield to a mixture of Tincture of Digitalis one fluidrachm, Sweet Spirits of Nitre one fluidounce; of which five drops may be given to a child a year old, in an infusion of Parsley root, repeating it three or four times a day.

When the symptoms of effusion are present, the case is almost hopeless, yet patients have recovered, although it is very doubtful whether actual effusion, so as to press upon the brain, had taken place. The hydragogue cathartics, diuretics, and applications to the head should be continued; a Solution of the Iodide of Potassium, in doses adapted to the age of the child, should be persevered in, and the Compound Tar plaster may be placed to the nape of the neck, and the discharge kept up as long as deemed necessary. (See Puncturing of the Cranium in the next article.)

In families where children are disposed to dropsy of the brain, much care is required in rearing them. They should be permitted to exercise in the open air, the various secretory organs of the body, as the skin, kidneys, and bowels, must be kept in a regular and healthy condition, they should not be subject to harsh usage, nor be made to task their brains too much with study, and all measures calculated to irritate or wound their sensitiveness must be avoided. A careful attention should be bestowed upon their diet, allowing them a hearty, nutritious, but easily digestible kind of food, omitting fats, acids, and tough meats,—their sleeping periods should be limited to about nine hours, and their beds should be of cotton, hair, &c., but in no instance should feathers be used. And above all things, no blows about the head should be permitted.

CHRONIC HYDROCEPHALUS.

CHRONIC HYDROCEPHALUS, or Dropsy of the Brain is not so frequently met with as the acute form. It occurs from infancy to adult age, and when it is observed in the former, it is supposed to have commenced before birth.

SYMPTOMS. The ordinary symptoms are headache, drowsiness, dulness of mind, inactivity, vertigo, pale countenance, with a look of bewilderment, and confused intellect. The skin is generally natural, the pulse quick, and convulsions occasionally occur. For a time, respiration, circulation, and digestion, continue unchanged, but they soon become affected, the appetite diminishes, as well as the heat and moisture of the skin; the breathing is labored and difficult, and emaciation takes place more or less rapidly. The limbs become debilitated, the walk uncertain and trembling, requiring assistance, until from atrophy of the muscles, the child becomes unable to walk; the head is seldom carried erect. The most striking feature of the disease is the enlargement of the head. In infants it commences soon, and proceeds rapidly, owing to the separation of the bones of the head, or sutures; but even when the sutures are ossified, the enlargement has taken place. This increase of size is confined to the vault of the cranium only, or upper part of the head, the base or lower portion remaining unchanged. As the disease progresses, all the organs of sense become more or less affected, the pupil of the eyes become dilated, the sight weakened, with more or less squinting, or obliquity of the eyeball. The intellect gradually becomes destroyed, the child looks and acts the idiot, and sinks into stupor, indifference and coma. Frequently, convulsions take place, followed by paralysis, and giving rise to difficulty in swallowing, retention of urine, constipation, or involuntary evacuations.

CAUSES. There is but little known with certainty regarding the cause of this disease; a strong predisposition to it appears to exist in some families, and it is also supposed to be owing to some malformation during fetal life. Among the exciting causes may be named cold, blows, falls, teething, disordered stomach and bowels, tumors, or tubercles of the brain, &c., and in a large number of cases, it is undoubtedly the result of chronic inflammatory action.

DISCRIMINATION. The only difficulty in determining the disease is previous to the enlargement of the head, and our judgment must be formed from a careful observation of the functional disturbances, as an unsteadiness of the muscles of the limbs, difficulty in standing or balancing, the inclination of the head to one side, &c. It may be distinguished from infantile remittent fever, if any fever be present, by the absence of remissions, and the gradual increase of cerebral symptoms.

TREATMENT. This will be very similar to that of the acute form, using hydragogue cathartics, diuretics, sudorifics, local applications to the head, and bathing the surface. In addition to this the Compound Tar plaster may be applied to the nape of the neck, and the discharge kept up as the patient can bear it. The Compound Syrup of Stillingia with the Iodide of Potassium, should also be given, three or four times a day. The diet should be nutritious, and the same rules observed as laid down in the preceding form of the disease. In some cases, the administration of Elaterium will be found useful as a hydragogue cathartic, thus, take of Elaterium four grains, Alcohol a fluidounce, Nitric Acid six drops; mix. The dose is from five to ten drops in water, for a child a year or two old, and which may be repeated if necessary.

“From a belief that effusion might be the result of want of firm resistance by the unossified cranium, compression has been tried, and has proved successful in a number of instances, and in others has brought on convulsions. To produce any good effect, the compression must be gradually increased, and continued for a considerable time, loosening the bandages, if symptoms of compression appear, or removing them if the skin be irritated.”

“Puncturing of the cranium has occasionally proved successful, and in so hopeless a disease, when all other means have failed, we are justified in having recourse to an operation which has even occasionally saved life. In performing the operation, a fine, lancet-shaped trocar is to be passed in the coronal suture perpendicularly to the surface, through the scalp and membranes, about an inch and a half below the edge of the anterior fontanelle, so as to avoid the sinus if possible, and the great veins. The fluid should be allowed to escape very slowly, the head being gently compressed in proportion, and the whole fluid should not be evacuated at once, only a few ounces at a time, and due pressure should be maintained both during and after the escape of the fluid. If the pulse becomes weak, the pupils contract, or the child faints, remove the canula and administer a stimulant—if inflammation arise treat accordingly.”—*Churchill*. Dr. Conquest states:—“I have now tapped nineteen cases, and of these ten were living when last heard of. Several of the children before the operation were reduced to the most deplorable condition, having frequent convulsions, with loss of sight, emaciation, &c.; but the diminution or disappearance of the symptoms has been very remarkable.” He adds, however: “In no instance has clearly marked congenital disease been benefited, and those cases have done best in which effusion manifestly resulted from inflammatory action, and in which cerebral excitement follows the operation.”

Dr. Watson states that the above two mechanical measures “are opposite measures and adapted to opposite conditions of the brain, the one supplying a defect of pressure, and the other relieving its excess; and that the application of either requires a clear and cool judgment and a constant attention to the symptoms which may arise during the treatment adopted.”

DROPSY OF THE CHEST.

DROPSY of the Chest, or Hydrothorax, are terms applied to an accumulation of serous or watery fluid within the cavity of the pleura. It produces injurious results more by its mechanical compression than by any peculiar quality it possesses, frequently reducing the size of the lungs by its pressure, and even displacing the heart. It may exist alone, but generally prevails as part of a more universal dropsy.

SYMPTOMS. At an early stage of the disease an oppression and difficulty of breathing is experienced, which is increased on every sudden or uncus-tomary exercise, or when the body is in a horizontal posture; and when the fluid is present in both cavities the breathing is still more short and labo-rious. The patient cannot lie on the side of the chest opposite to the one affected, and most generally, especially in the advanced stages, assumes more or less of the sitting posture. There are frequent shiverings; a short, dry cough; sense of heaviness at the pit of the stomach; confused and painful sleep, with unpleasant dreams and sudden startings; palpitation of the heart; feeble, irregular, or intermittent pulse; occasional faintings; and paleness of the face. As the effusion increases, the face, lips, and hands have a livid or mottled appearance, a dropsical swelling of the feet and legs takes place, there is considerable thirst, a sense of numbness is complained of in one or both arms, the eyes have a peculiar stare expressive of great anxiousness, the lower eyelid is frequently swollen, the throat is dry, and the urine is scanty and very high-colored, and on cooling deposits a pink or red sedi-ment. In some cases a sensation of fluid in motion can be distinctly per-ceived by the patient on making certain sudden changes in the position of the body.

The affected side becomes enlarged and round, the intercostal spaces (between the ribs) become extended by the gradual divergence of the ribs. Upon percussing or striking the side in which the effusion exists, it will give a dull sound like that produced by striking upon solid flesh, as the thigh or buttock; when the patient is erect, sitting or standing, the fluid moves down-ward, and the dull sound on percussion is then only heard in the inferior part of the chest. As the disease advances the natural respiratory murmur will gradually subside until it can scarcely be heard.

The continued accumulation of fluid is marked by intolerable difficulty of breathing; the patient is obliged to remain in the erect posture, with his mouth open, and his body leaning toward the side in which the effusion is greatest, while he incessantly manifests the greatest anxiety for fresh air. The face, hands, arms, and feet become swollen and cold; a cold, clammy sweat occurs upon the face and upper part of the body, drowsiness, coma, or delirium, occasioned by the difficult transmission of the blood through the lungs, and want of sleep, frequently attend the latter periods of hydrothorax, and from the same cause the expectoration is sometimes bloody. Death may take place suddenly; in some cases it is preceded for a few days by a spitting of blood; but more commonly the patient dies gradually from suffocation or apoplexy, the first, the result of the increased pressure of the accumu-lated fluid on the lungs, the second, from pressure of the dark, venous blood on the brain, which is often accompanied with serous effusion on the surface, or in the ventricles of this organ. Occasionally hydrothorax ends in gen-eral dropsy, and which may, indeed, accompany it from the beginning.

CAUSES. Dropsy of the chest may be produced by the various causes which originate other forms of dropsy, as cold, injuries, obstructions to the circulating system, recession of cutaneous eruptions, organic diseases of various organs, want of proper nourishment, general debility, long-pro-tracted fevers, low grade of inflammation of certain parts, and frequent and excessive evacuations. It is very apt to be the result of an intemperate use of liquors, especially among beer, gin, and whisky drinkers; very common causes are frequent bleedings, frequent and excessive purgings, as well as sweatings, and urinations, and it has occurred from the too free use of mer-curials. Inflammation of the pleura often gives rise to it. Injuries to the internal viscera especially the liver, are not unfrequently followed by hy-drothorax.

HYDROPERICARDIUM, or *Dropsy of the Heart*, may be included in the term Hydrothorax. In this affection there is an effusion of water in the pericardium, or membranous sac covering the heart, but there are no well-determined symptoms by which it can be distinguished from several other maladies of this organ. The symptoms in many respects resemble those of dropsy in the pleural cavity, with palpitations of the heart, irregular or intermitting pulse, excessive shortness of breath, amounting often to suffocation, or an inability to breathe except in the erect posture, and dulness or percussion, as in the previous disease. It is not commonly preceded by some inflammatory or other diseased condition of the heart, and is often associated with other dropsical affections. Causes similar to those named under hydrothorax will produce it, and the treatment will likewise be the same.

TREATMENT. In the treatment of these diseases, a very important class of remedial agents is Hydragogue Cathartics. The one which I generally prefer is the following: Take of Jalap fifteen grains, Cream of Tartar thirty grains, Elaterium from an eighth to the half of a grain. Administer this for a dose, and repeat it every six hours; should the Elaterium occasion nausea or vomiting, a grain or two of Capsicum added to each dose will generally prevent it. As soon as the discharges are watery, and especially if vomiting be present, the Elaterium may be omitted, continuing the use of the powder every six hours until benefit is obtained. Other hydragogues may be used with advantage, as Compound Powder of Jalap twenty grains, Cream of Tartar twenty grains, Podophyllin half a grain, or a grain; mix. This may be given for a dose, and likewise be repeated every six hours. Another very valuable hydragogue cathartic in dropsical diseases is the Large Flowering Spurge, which may be given in doses of fifteen or twenty grains, repeating it every day or two; it produces copious watery evacuations, and is apt to cause vomiting. Of course, should the patient be so debilitated as to be unable to bear too much purgation, they should be repeated only two, three, or four times a week, according to his strength. Should the hydragogues produce great debility and prostration, the strength of the patient must be properly sustained by stimulants.

For a constant drink the patient must take a strong infusion of a mixture of Hair-cap moss two ounces, Dwarf Elder Bark, Juniper Berries, each, one ounce. From half a wineglassful to a wineglassful may be taken every hour, and also whenever the patient is thirsty. Or, other diuretics may be drank, as an infusion of equal parts of Spearmint, Parsley root, Elder flowers, and Indian Hemp root. An infusion of Queen of the Meadow, Dwarf Elder, and Indian Hemp, each, equal parts, has been highly recommended for a purpose similar to the preceding. And to promote an absorption of the effused serum, as well as to increase the secretions of the kidneys, a solution of Iodide of Potassium has been advised; this will undoubtedly be found efficient in many cases, but, as a general agent for these purposes, I prefer the Compound Infusion of Parsley.

In this, as in other dropsical affections, the skin should be bathed daily with a weak alkaline solution, using considerable friction in drying; and the Compound Tar plaster should be applied over the affected side, and worn as long as the patient can bear it, renewing it from time to time as the discharge ceases, and before the part has thoroughly healed.

When the effused fluid has been carried off, in order to prevent its return, the Compound Infusion of Parsley should be used daily, for several months in succession; but, a resort to the preceding measures should be adopted as soon as symptoms of a returning effusion are manifested.

This diet should be light, nutritious and digestible, and adapted to the

condition of the stomach, as well as that of the general system. Pepper-sauce, mustard, garlic, onions, horseradish, cresses, and cayenne pepper, may be taken with the food, if contra-indicating circumstances are not present. Gentle exercise taken regularly will be found serviceable, as the strength of the patient improves, but he should carefully avoid all causes which may ultimate in cold or other diseases.

In hydrothorax and hydropericarditis, Dr. Debreyne recommends the following: Take of Jalap, Squill, two and a half drachms, Nitre five drachms, White Wine one pound; mix, and let them stand for twelve or fourteen days, frequently agitating. The dose is a table-spoonful from one to three times a day, or sufficient to procure six or eight evacuations every twenty-four hours. Or, if patients object to this, or it disagrees with the stomach, use the following pills: Take of Powdered Digitalis four drachms, Powdered Scammony, Powdered Squill, each, two drachms, Extract of Juniper a sufficient quantity to form a pill-mass with the other articles. Divide the mass into 120 pills, and give one or two pills for a dose, repeating it three times a day, and washing them down with a table-spoonful or two of White Wine or Water, in a bottle of which half an ounce of Nitre has been dissolved.

DROPSY OF THE ABDOMEN.

DROPSY of the Abdomen, or Ascites, is a collection of water in the peritoneal sac, or general cavity of the abdomen; sometimes it is found between the peritoneum and abdominal muscles, and occasionally it is contained in sacs upon or connected with some of the viscera, as the ovaries, liver, &c., and is then termed encysted dropsy. Ascites may occur in either sex, or at any age, but, like the other forms of dropsy, is chiefly to be met with in persons advanced in life.

SYMPTOMS. Dropsy of the Abdomen is sometimes, but not always, preceded by a loss of appetite, dry skin, cough, oppression at the chest, scanty urine, and costiveness. Occasionally it commences by cellular dropsy, especially of the lower extremities. In a short time a slight enlargement of the inferior part of the abdomen is observed, together with a disagreeable feeling, and some tenderness when pressure is made; the enlargement gradually increases, until the whole abdomen becomes uniformly swollen and tense. As the fluid accumulates, the difficulty of breathing generally increases, being worse when the patient lies down; the face is pale and bloated, frequently pitting when pressure is made with a finger; great thirst ensues; the urine is very scanty, thick, and high colored, and on standing deposits a brickdust-colored sediment; the stomach and bowels are frequently deranged, with colic-pains, flatulence, nausea, and a sense of weight in the abdomen: the pulse is variable, being sometimes slower, and at others faster than natural. In most cases, by applying one hand on one side of the abdomen, while the patient is sitting or standing, and striking gently on the opposite side with the tips of the fingers of the other hand, a distinct fluctuation will be felt; sometimes it can even be detected by the ear.

DISCRIMINATION. Dropsy of the abdomen may be detected from tympanitis, by the want of fluctuation in the latter difficulty, and the clear sound on percussion; from *ovarian* or *encysted dropsy* by the indistinct and limited fluctuation, and by observing that instead of the uniform swelling of the abdomen found in ascites, only one side, or some particular part of the abdomen, is more protuberant than the rest. If ovarian dropsy be watched from its

beginning, a moveable tumor, falling from side to side as the patient changes her position, will be observed before much enlargement takes place; and at a later period, the unequal prominence, above mentioned, will be noticed. Ascites may be distinguished from *dropsy of the womb*, by observing that the tumor is confined to the region of that organ, and as it increases, somewhat resembles the shape of the pregnant womb. It yields upon pressure; there is a less marked sense of fluctuation, and the urine is but slightly diminished if at all. It also requires to be carefully distinguished from pregnancy. Sometimes pregnancy and ascites may exist together, which renders the case exceedingly perplexing. The modes of distinguishing these cases are too lengthy to name here; though it may be observed that in dropsy the complexion is pale and sickly, with dropsical swellings generally of the feet and ankles, while in pregnancy the complexion is clear. But the discrimination between all the above conditions is frequently very difficult.

CAUSES. In addition to the causes heretofore named, in dropsy of the chest, ascites may be produced by diseases of the liver or spleen, scarlet fever, intermittent and remittent fevers, erysipelas, protracted diarrhea, diseases of the heart, peritoneal inflammation, &c.

PROGNOSIS. When not complicated with or dependent upon some incurable disease of an internal organ, ascites is generally curable; but it frequently remains unyielding to any treatment, until the patient is destroyed by it. In some cases life has been prolonged by tapping repeatedly, and in a few rare instances, this has eventually removed the disease. When tapping is performed, a greater chance for effecting a cure may be had, if the subsequent treatment be as vigorously followed for some time, as though the operation had not been performed.

TREATMENT. This will be similar to that named for Dropsy of the Chest; administering hydragogue cathartics, diuretics, and subsequently the Compound Infusion of Parsley. As the water is carried off, a broad bandage must be worn around the abdomen, sufficiently tight not to be uncomfortable, and gradually increasing its pressure, as the enlargement decreases. Two or three times a day the bowels should be kneaded or shampooed by hand, more especially after the fluid has been removed, and should any tenderness remain, the following liniment may be applied over the whole abdomen immediately previous to each shampooing:—Take of Oil of Juniper, Oil of Sassafras, Oil of Cajeput, Oil of Spearmint, each, half an ounce; mix for a liniment. This application should be continued for several months after the removal of the water, as well as the use of the Compound Infusion of Parsley.

When the stomach and bowels are irritable, as manifested by a smooth red tongue, by tenderness upon pressing over the region of the stomach, and by the ejection of the hydragogue administered, the following may be substituted for it:—Take of Hydro-alcoholic Extract of Indian Hemp two drachms, Hydro-alcoholic Extract of Blue Flag one drachm, Eupurpurin one drachm; mix, and divide into sixty pills, of which one may be given every four or six hours. While using these, continue the other external measures heretofore named.

When the disease is complicated with disease of the liver or spleen, the Compound Tar plaster should be applied over the region of the affected organ, and a discharge kept up as long as the patient can bear it, renewing the application from time to time, until there is decided evidence of convalescence. At the same time the treatment adapted to the affections of these organs must be conjoined with that for dropsy. In two cases of dropsy of the abdomen, I have observed the most marked benefit from the application of

the above plaster, over the greater part of the abdomen, in connexion with the other treatment.

The diet, regimen, &c., recommended in dropsy of the chest, is also applicable to this and the succeeding forms of dropsy. The above treatment will be found useful in *dropsy of the womb* and of the *ovaries*; but it sometimes happens that no measures will avail in these affections, and the only resort left, to prolong the patient's life, will be tapping. Occasionally, by proper management, cures are effected even after tapping has been performed.

CELLULAR, OR GENERAL DROPSY.

By Cellular Dropsy, or Anasarca, is meant a collection of fluid in the cellular membrane of the external parts of the body, chiefly beneath the skin. It may be limited to the inferior extremities, or it may spread over the whole body. The swelling in dropsy is always regular and uniform, and of a soft doughy feel, leaving a pit or depression when pressed upon by the finger, which slowly returns to its former fulness. When there is an accumulation of water around the joints, or when it is confined to a limited space, the swelling occasioned by it, is known by its pitting on pressure, and is termed "edematous."

SYMPTOMS. Cellular dropsy most commonly manifests itself at first, by a swelling of the feet and ankles, which is more evident in the evening, especially when the person has been standing or walking considerably; and, toward morning, or when the recumbent position has been maintained for some hours, the swelling partially or entirely disappears for the time. The swelling is soft, inelastic, and pits upon pressure, and the skin presents a paler appearance than usual. As the fluid continues to accumulate, the swelling extends upward into the legs, thighs, and trunk of the body, and in many instances when the accumulation is very great, the face and eyelids appear swelled and bloated, especially in the morning. Sometimes the fluid oozes out through the pores of the skin, or raises the skin in elevations resembling blisters. The bowels are usually costive, the skin dry, tense, and shining, the pulse usually small and weak, the countenance is sallow, the thirst is more or less increased, the appetite impaired, the urine scanty and high-colored, and depositing a copious reddish sediment on standing. As the disease progresses there is a sensation of general debility, with sluggishness and inactivity, and a slow fever. Occasionally, in the more advanced stages, the skin presents a livid hue. When the watery accumulation has become very general, the vesicular and cellular structures of the lungs become affected, occasioning difficult breathing, coughing, and a watery expectoration. Sometimes the disease is connected with dropsy of the abdomen or chest, and is then apt to be more difficult of cure.

CAUSES. Anasarca is a symptom indicating a functional or structural disease of the system, or some portion of it; and it may be caused by any circumstances which will produce a general state of debility of the body. Thus it frequently follows febrile, and inflammatory attacks, hemorrhages or excessive bleedings, the constant and excessive use of drastic cathartics, obstructed menstruation, chlorosis, pressure upon the blood-vessels which return the blood from the lower extremities, exposures to cold and damp, and the excessive use of spirituous liquors. Sometimes it is owing to incurable diseases of the heart, spleen, liver, or kidneys, and will of course prove fatal.

PROGNOSIS. When the skin becomes moist, the thirst diminishing, the

swelling gradually disappearing, and the urine flowing more copiously, these are favorable symptoms. But when there is some organic disease associated with the dropsy, when the thirst continues great, with great emaciation, erysipelatous inflammation, quick, small pulse, low fever, lividity of the skin, and drowsiness, these are unfavorable symptoms. A recent anasarca is generally more curable than one of long standing, and when it arises from mere debility than when it is occasioned by some disease of internal organs. Occasionally a spontaneous cure is effected, by a critical vomiting, purging, or increase of the urinary discharge.

TREATMENT. This will depend very much upon the cause. If it be a sequel to scarlet fever, or other febrile diseases, it may be treated as already mentioned on page 220. If it be owing to intemperance, no benefit can be expected by medical measures, unless the bad habit be dispensed with entirely. If it be owing to accompanying disease, this must be removed, if possible, either before or immediately after the evacuation of the water by the means to be named. And if it be owing to debility, we should endeavor to restore the tone of the system, and strengthen the general habit.

The treatment for the evacuation of the dropsical fluid will be similar to that named for Dropsy of the Chest; administering hydragogue cathartics, diuretics, and subsequently the Compound Infusion of Parsley. As the water is removed, the limbs should be bandaged as tightly as the patient can comfortably bear, renewing the application of the bandage once or twice daily, particularly in the morning, when the swelling has somewhat diminished from diffusion of the fluid, owing to the recumbent position. The skin should be frequently bathed with a mixture of weak ley and decoction of White Oak bark, followed by friction with a brush, or coarse towel; and this friction should always be employed on every renewal of the bandage. In some cases, the application of a mixture of two parts of Sweet Oil with one of Tincture of Capsicum, to the legs, will be found useful.

When the disease is complicated with disease of the liver, or other organs, use the Compound Tar plaster, in the manner recommended for Dropsy of the Abdomen, page 340, with the appropriate treatment for disease of the particular organ or organs affected.

These means should be continued more or less actively, according to the strength and condition of the patient, when the use of the Compound Infusion of Parsley, together with some tonic, as for instance, the Compound Wine of Comfrey, should be continued for some months afterward, in order to render the cure permanent. And with these, the external frictions should be used twice every day.

The diet, regimen, &c., should be similar to that named in the preceding forms of dropsy.

Among the many useful means which have been used for the removal of the dropsical effusion, and for effecting a cure of the disease, may be named the following:

1. Take of common Whortleberries four ounces, Parsley root eight ounces, good Holland Gin, or Whisky two quarts. Mix together, and heat to the boiling point; then let the mixture stand till cold, and give half a wineglassful three or four times a day, diluted with some sweetened water. This, however, will not answer in cases of dropsy among intemperate persons.

2. Take of Indian Hemp, Milk weed, Juniper berries, and dwarf Elder bark, each, one ounce. Add to these articles in coarse powder, two pints of boiling Cider. When cold give a wineglassful three or four times a day. (For Dropsy from Affection of the Kidneys, see Bright's Disease.)

DROPSY OF THE SCROTUM.

DROPSY of the Scrotum, or Hydrocele, is a collection of watery fluid in the scrotum, or bag which contains the testicles, in some part of the testicle itself, or in the spermatic cord. It is seldom a fatal disease, but may increase so as to become a source of annoyance and interfere with the free motions of the body. When it occurs in children, it frequently disappears spontaneously.

SYMPTOMS. Generally, a smooth, soft, elastic, and often transparent swelling commences in the lower part of the scrotum, and gradually extends upward; the tumor finally becomes somewhat pear-shaped, and feels somewhat like a bladder distended with fluid. No pain is produced upon making pressure, unless the testicle be compressed.

DISCRIMINATION. Hydrocele may be distinguished from rupture, by its forming slowly, while rupture takes place suddenly; the swelling of hydrocele does not disappear on pressure, or change of posture, in rupture it does; in hydrocele the swelling begins at the lower part of the scrotum, in rupture at the upper; in rupture coughing enlarges the swelling, in hydrocele it does not; in hydrocele, when recent, a candle placed behind the swelling will show a translucency, which is not the case in rupture. The absence of pain will distinguish hydrocele from those diseases of the testicles, which are accompanied with pain.

TREATMENT. It is desirable to cure the disease in infants, without an operation, if possible; for this purpose the scrotum may be enveloped in a bandage, making as much equable pressure on this part, as the child can bear, and keeping the parts stimulated by the application of a solution of Muriate of Ammonia in water, or vinegar, with which the bandage may be kept constantly moistened. As the swelling diminishes, the bandage will require to be readjusted. In connection with this, administer diuretics and keep the bowels regular.

If this should fail, it will be necessary to evacuate the water, and use means calculated to produce a slight degree of adhesive inflammation, which will cause the outer covering of the testicle to adhere to the inner wall of the bag, thus destroying the cavity, and leaving no room for water to accumulate. This course is also necessary in adults, especially when there is a large amount of fluid, and a thickening of some of the tissues. This is done by the surgeon's introducing a trocar and canula in front and at the lower part of the scrotum, and nearly but not exactly in its center, so as to keep clear of the testicle and all large veins. On withdrawing the trocar, the fluid will pass out of the canula, and when all is drawn off, then inject through the canula some Wine, Brandy and water, Lime-water, or a solution of Sulphate of Zinc one drachm in a pint of water, or, a mixture of Tincture of Iodine half a fluidrachm, and water three fluidounces. Do not allow the injection to pass away, until it has caused a degree of smarting or pain; then let it run off, and remove the canula, but not before. If too much inflammation be produced, it will require to be allayed by hot fomentations of herbs, as Stramonium, Hops, &c., with diaphoretics, diuretics, and cathartics. If not sufficient inflammation is induced, a tent, or piece of linen or silk twisted into a cord, may be introduced in the opening, and changed every day, until the required adhesion has taken place.

NERVOUS DISEASES.

UNDER this caption, I will consider those difficulties which are generally attributed to derangement of the nervous system, as well as those which are supposed to proceed from an impaired condition of the functions of the brain.

APOPLEXY.

APOPLEXY is a sudden suspension of consciousness and voluntary motion, with a slow, labored, and stertorous or snoring breathing. It most generally attacks persons somewhat advanced in years, or middle-aged; and corpulent persons with short, thick necks, florid cheeks, and good-sized heads, are said to be the most liable to it, especially when they are sedentary and use a full, stimulating diet, or indulge in the enjoyments of the table and wine-board; but it has equally occurred in persons whose necks were long and slender, and whose countenances were naturally pale or colorless.

SYMPTOMS. Apoplexy is most usually preceded by one or more symptoms, which, if properly attended to may prevent an attack; these symptoms are as follows, but will be found to vary in different individuals:—a dull pain in the head, with a sense of weight or heaviness; giddiness; drowsiness; frequent fits of nightmare; cramps or spasms in various parts of the body; fulness and redness of the countenance and eyes; obscurity of vision; bleeding from the nose; ringing in the ears; faltering in speech or using one word for another; and loss of memory. The most important of these symptoms are giddiness, particularly on stooping down, on straining at stool, on coughing, on pulling on a tight boot, and especially when conjoined with debility; heavy and unrefreshing sleep, with more or less drowsiness through the day; cramps of the legs at night; a constant inclination to sigh; and, a numbness, or palsy of some part. But more generally the attack occurs suddenly, without any previous warning, and the patient falls to the ground in a state of unconsciousness from which he cannot be aroused. His breathing is usually of a loud, snoring character, is slow and laborious, the face is dark, red, and turgid, the veins of the neck and head are swollen, the head is hot, and often in a profuse sweat, the eyes project, and are bloodshot, and either closed or half open, the pupils are usually dilated, but occasionally are much contracted; a frothy saliva is often blown from the mouth with considerable force, and the pulse from being strong, full, and regular or slow, soon becomes weak, rapid, and unequal or intermitting. The fit may last from four hours to twenty, and even to forty or more. Sometimes the patient will be insensible and motionless for several days, and gradually recover his intellect and strength; but more commonly in these instances, the powers of the mind become permanently impaired to a greater or less extent. Frequently the first attack terminates fatally, but it is very rarely the patient survives the third attack.

The mode of attack varies; thus some persons fall down suddenly, with an entire suspension of sense and motion, flushed face, full pulse, and a snorting respiration; occasionally spasmodic contraction of some of the muscles take place, or convulsions. Death may ensue from this attack, or perfect recovery may gradually take place, or recovery with a transient or permanent paralysis of one side. Again, the person experiences a sudden

attack of pain in the head, becomes pale, sick, and faint, vomits, and falls down in a state resembling syncope; the face being pale, the body cold, and the pulse feeble,—perhaps a slight convulsion may ensue. Occasionally there is no falling down, but a slight and transient forgetfulness. From either of these, recovery generally takes place in a few minutes, but soon after, it may be a few hours or several days, a sense of oppression comes on, with forgetfulness, incoherency, coma, and death. Another mode of attack, is that in which the loss of the powers of speech, and of one side of the body occurs suddenly, without stupor, or at all events any long continuance of it, from which recovery may take place, or it may pass gradually into apoplexy in a few hours.

Persons subject to apoplexy may be attacked at any time, but more generally soon after a hearty meal, during great or uncommon exercise, and during a state of mental excitement.

CAUSES. Whatever will cause a determination to the brain, accumulating blood in its vessels, and pressing upon this organ with or without effusion of blood or serum, may be an immediate cause of apoplexy; thus it is frequently found to follow violent exercise, excessive venereal indulgences, too free use of alcoholic drinks, intemperance in eating, use of narcotics, sudden mental excitements, violent fits of coughing or sneezing, exposure to the heat of the sun, straining at stool, &c. Any obstruction to the return of the blood from the head, by producing excessive dilatation of the blood vessels, or an efflux within the cranium, is likewise an immediate cause, as tight cravats or ligatures around the neck. Apoplexy has likewise been occasioned by large bleedings, exposures to excessive cold, injudicious employment of the warm bath, innutritious diet, and whatever will produce an anemic condition of the system.

The predisposing causes are various, with some it appears to be hereditary, with others it follows as a result of frequent bleedings, sedentary habits, suppression of accustomed evacuations, long-continued mental depression, use of snuff, &c., as well as certain diseases, as Bright's disease, enlargement of the heart, fatty degeneration of the blood-vessels, as well as other abnormal conditions of the brain or its vessels.

DISCRIMINATION. Apoplexy may be distinguished from epilepsy, by the absence of convulsions in the former, or which, if present at all, are very slight and affect only a part of the body; in epilepsy there is usually a foaming at the mouth, and frequently a gnashing of the teeth, and a noise somewhat resembling the barking of a dog; but there is seldom any snoring or stertorous breathing. Apoplexy is more common to middle age—epilepsy to early age, and is a chronic disease, the attacks occurring more or less frequently; the fit is also of shorter duration, and the patient more readily aroused from it. A comatose condition, with or without convulsive action, is frequently caused by excessive intemperance in the use of intoxicating liquor, the odor of which may be discerned in the breath; and in these cases, the patient may be partly aroused by shouting in his ear, or applying a strong odoriferous stimulant to his nostrils. When apoplexy is caused by narcotics, the respiration will be more tranquil but not stertorous, the pulse will be more rapid, the face pale and calm, and, in most cases, the patient can be aroused by violent agitation.

PROGNOSIS. Apoplexy does not always immediately terminate fatally; nevertheless, it is always to be considered a serious disease. The second and third fits of apoplexy are more fatal in their character than first, or, if recovered from, are more apt to leave permanent impairment of the mental faculties, as well as paralysis.

TREATMENT. The most prompt and energetic measures must be pursued in the treatment of apoplexy. The patient should be removed to a cool, airy place, and all bandages or cravats around the neck be at once removed. Then slightly elevating the head, and holding it between the knees, or in some other convenient manner, let one person pour a stream of cold water upon the head and neck, while another holding some common table salt in his hand, must rub it on the head and temples, until the patient is sufficiently restored to take medicine. At the same time, the limbs should be ligated, (see *Hæmastasis*, Part III,) to retard the venous circulation, continuing this until other measures can have time to prove efficacious. But the ligatures should not be allowed to remain on too long, removing them as soon as symptoms of a restoration commence. When there are good reasons for supposing the stomach to be filled with food, as, for instance, when the attack occurs after a meal, an emetic should be administered, using either the Compound Powder of Lobelia for this purpose, or the Compound Acetated Tincture of Bloodroot. But under ordinary circumstances, emetics are to be avoided in apoplexy. If there is no necessity for an emetic, then an active purgative should be at once administered, as the Compound Powder of Jalap.

When the patient does not readily recover from the use of ligatures, cold water, and salt applied as above named, other measures must be used to aid in lessening or overcoming the determination to the head. The soles of the feet should be thoroughly bastinadoed, repeating it from time to time as the urgency of the case may require, at the same time adopting means to obtain an evacuation from the bowels. An injection composed of Castor Oil a gill, Compound Tincture of Lobelia and Capsicum two fluidrachms, warm water one pint, molasses one gill, fine table salt a drachm, should be thrown into the rectum, and repeated every fifteen minutes, until free catharsis is produced; and it may be aided in producing this effect by placing a little sugar (with which a drop or two of Croton Oil has been rubbed) on the tongue as far back as possible; if symptoms of sinking commence, these measures must be stopped. In cases where the comatose condition is induced by intoxication, instead of causing free catharsis at first, it will be better to administer an emetic of Salt, Mustard, and Lobelia, in some cold water; and after the induction of free vomiting, good fresh milk may be drank by the patient. He should also be placed in bed, with warm irons or bricks applied to the extremities, and covered warmly, and be made to take the following powder, every hour for two or three times, and subsequently for every three or four hours:—Take of Sulphate of Quinia four grains, Sulphate of Morphia, Podophyllin, each, one grain; mix, and divide into eight powders. As soon as purgation is effected, the powders may be omitted for twenty hours, or longer, according to the circumstances.

When the case is one produced by Opium, it will be well to give freely of strong Coffee, and apply the electro-galvanic current along the spinal column, and from the stomach to the back of the neck, beside keeping the patient awake by forcing him to walk about between two attendants. Administering, likewise, at first an emetic, and following it by an active cathartic.

After an attack of apoplexy, the patient should endeavor to prevent a subsequent one, by pursuing the proper hygienic and remedial measures. The former will be the same as hereafter named for those predisposed to the disease; the latter will consist of tonic and alterative treatment; the surface of the body should be kept healthy by frequent bathings and friction; the bowels should be kept regular, once a day, either by natural or artificial means. After the first few days following an attack, active purgation is

unnecessary and dangerous. The Compound Syrup of Stillingia, with Iodide of Potassium, should be taken daily, and diuretics should be used, as infusions of Hair-cap moss, Queen of the Meadow, &c.; in cases of effusion, these tend to render absorption more active. Those who are anemic, should take small quantities of Iron daily, either in powder, tincture, or in their food; one to three grains of any preparation of Iron per day, will be fully sufficient, as the system will be unable to dispose of any more. If paralysis be a consequence of apoplexy, treat as directed under its appropriate head. In many instances, after recovery from an apoplectic attack, much benefit will be derived from the Compound Tar plaster applied to the back of the neck, and keeping up the discharge from it as long as possible.

All persons disposed to apoplexy, should adopt certain hygienic measures to fortify their systems, and thereby prevent an attack. The diet may be nutritious, but it should be light, or spare, and easy of digestion, being careful to have the meals at regular hours, and taking great care to *masticate the food thoroughly*; animal diet should not be used during the hot summer months, and with great moderation in cold seasons. All high seasoned food, stimulants, and intoxicating liquors, should be positively avoided. Moderate exercise should be taken daily and at regular hours, but not sufficient to excite heat, or hurry respiration. All excesses or excitements should be avoided as much as possible, as long-continued exertions of mind, anger, or other violent mental excitements, late hours at night, exercise immediately after a meal. Venery should be indulged in only occasionally. The neck should be kept free from all tight cravats, or other compression, which might obstruct the return of blood from the head; the feet should be kept warm and dry; exposures to cold, and especially to cold feet are dangerous. Flatulency and sour stomach, should always be removed, if possible, as soon as known to exist. Care should be taken not to use the warm bath too frequently, or too long at a time. The hours of sleep should be regulated not to exceed nine hours, and the bed should be a hard mattress, having the head slightly elevated. During warm weather, or whenever there is a giddiness of the head, or other symptom of fulness of its vessels, cold water poured on the head, and along the spinal column, will be found a very pleasant, safe, and salutary measure. Good, pure air in the rooms at home, and when abroad, is an important item. Direct exposure to the sun's rays should invariably be shunned; neither should the head be exposed to the continued action of heat produced artificially. Sudden turning of the head, or straining the muscles of the neck to look upward, sideways, or behind, should also be carefully avoided, as well as straining at stool, &c. For at least two hours previous to retiring to bed, no food must be allowed to enter the stomach. Indeed, without the most rigid attention to the above measures, and the rules of hygiene generally, it will be a very difficult matter to prevent an attack of apoplexy in those predisposed to it; while, on the other hand, care and prudence in observing them, will remove the predisposition, and be productive of the most essential benefit. Bleeding from the arm or elsewhere, although recommended by some to overcome the tendency to apoplexy, is exceedingly improper, and should never be permitted under any circumstances whatever, as it will produce the very disease it is intended to overcome.

PALSY, OR PARALYSIS.

PALSY is a diminution of mobility and sensibility, or a partial loss of control or power over one or both of them; it may be confined to one part of the body, or be extended to several parts. When it is confined to a single limb, or to certain muscles of one part of the body, it is called *local*, or *partial palsy*; when it affects one complete half of the body, from the head to the foot, it is called *hemiplegia*, the left side being more commonly affected than the right; when one-half of the body is attacked, in a transverse direction, as the lower limbs from the hips downward, it is termed *paraplegia*; and when there is a continual tremor attending, it is called *shaking palsy*, though this condition will frequently be found a symptom of chorea instead of palsy. Sometimes the powers of sensation are but little affected, while those of voluntary motion are considerably so; at others, both motion and sensation are impaired to a greater or less extent.

SYMPTOMS. Palsy is most generally a symptom indicating that the roots of the spinal nerves, the spinal cord, and even the brain itself, are in an abnormal condition. It most commonly manifests itself by a sudden loss of sensation and motion of the part attacked. Occasionally, however, there are certain symptoms previous to the attack, as a coldness of the parts, with more or less numbness, want of natural color, and slight spasmodic twitches. The loss of motion may increase until it is apparently complete, or it may remain partial and fixed. In cases where the brain is much diseased, there will generally be a drawing of the eye and mouth to one side, with unintelligible and disordered speech, and more or less deterioration of the mental faculties. When the extremities have been affected for a long time, in addition to the loss of motion and sensation, the muscles of the parts become soft and weak, and waste away.

There are likewise various other paralytic affections met with, as, palsy of the optic nerve, or amaurosis, palsy of the neck of the bladder, palsy of the muscles of the back, producing curved spine, lead palsy, &c., some of which will be hereafter treated of, but many of which are not easy to account for.

CAUSES. Paralysis may be produced by whatever affects the brain, the nerves, or their roots, as apoplexy, pressure on certain parts, by tumors, effusion, over-distension, &c., recession of eruptions, or translation of disease, injuries, intemperance, &c., &c. Hemiplegia more commonly follows an attack of apoplexy; paraplegia may be the result of an injury to the spine, or of some affection of the spinal nerves; local palsy is generally a consequence of injury to certain parts, of disease, or continued pressure.

PROGNOSIS. The termination of palsy will depend much upon the condition of the nervous system at the time of the attack. When not complicated with some chronic disease, the patient may recover in a few days, weeks, or months; but if the brain or nervous system be permanently diseased, a perfect recovery will not be likely to take place. Usually, in paralytic attacks, there is a slow but gradual and imperfect amendment, in which the patient may remain for some months or even years, and ultimately die from disease of the brain, apoplexy, or some other disease. If there be a sensation of warmth in the affected parts, a slight pricking pain, or a slight stinging or crawling sensation, it is a favorable indication. When there is any serious disease, or mechanical injury of the brain, or spinal marrow, recovery is not to be hoped for. Effusions occasioning paralysis, usually terminate fatally.

TREATMENT. When palsy suddenly and violently attacks a person, the same treatment should be pursued as named for apoplexy. Should this not succeed, or but slightly, in removing the attack, (also in cases of palsy of some standing,) the following course will be found very successful.

The bowels should be kept regular daily, but this will frequently be found very difficult to accomplish, from the obstinate constipation which is sometimes present, and in which instances it will be necessary to purge the bowels daily, for some days, by doses of Podophyllin and Leptandrin, aided by purgative injections; the injection advised in apoplexy will be very useful. But in all cases where regularity of the bowels can be had, without active purgation, it will be the better course.

The skin should be bathed daily with an alkaline solution to which some alcohol has been added, and in drying, a coarse towel with brisk friction should be used.

Internally the patient should take the Compound Syrup of Stillingia with Iodide of Potassium, three times a day, or some other preparation in which Iodine enters. He should likewise use in connection with the alterative, one of the following preparations:—

1. Take of Strychnia two grains, Extract of Belladonna five grains, Alcoholic Extract of Black Cohosh forty grains; mix together, and divide into forty pills. The dose is one pill, to be repeated two, three, or four times a day. This pill will be found more useful in paraplegia than hemiplegia, although it frequently proves useful in each form.

2. Take of Saturated Tincture of Rhus Toxicodendron half a fluidounce, Saturated Tincture of Aconitum root, Volatile Tincture of Guaiacum, each, two fluidrachms; mix. The dose is forty drops every three hours.

3. Take of Alcoholic Extract of Nux Vomica eight grains, Protoxide of Iron one grain; mix, and divide into twenty-four pills. The dose is two pills twice a day, gradually increased to four; it is also useful in paralysis of the bladder.

4. Take of Xanthoxilin, Iridin, each, one drachm, Horseradish, two ounces, Mustard one ounce, Sweet Flag one ounce, Whisky four pints. Add the drugs to the whisky, and allow them to stand for fourteen days, frequently agitating. The dose varies from a teaspoonful to a table-spoonful, three or four times a day, either alone or diluted with sweetened water. This is very useful in cases of long standing, accompanied with much debility.

In addition to this, local or counter-irritant measures must be employed; thus, Firing may be applied along the whole course of the spinal column, and repeated every day or two. Or, in hemiplegia the Compound Tar plaster may be placed at the nape of the neck, and a discharge kept up as long as the patient can bear it, renewing it, from time to time, before perfect healing has taken place. In paraplegia, this plaster should be placed over the affected part of the spine. Galvanic or electro-magnetic currents should also be passed through the affected parts, placing one pole of the battery over the spine just below the Compound Tar plaster, and the other along the extremities of the affected parts; and in some cases these currents should also be passed through the brain. But, in each instance, care must be taken not to produce too powerful shocks, which is an incorrect course pursued by some persons not acquainted with the true action of this agent. The object is to stimulate, not to exhaust. The above course should be persisted in, if any benefit is found to follow, after a persevering trial of several weeks; but, if no benefit follow after a reasonable time, some other course must be adopted. And as soon as the patient has recovered sufficiently, he should take moderate exercise daily, as riding, walking, &c.; the shower-bath will be found an excellent auxiliary, or cold douches to the head and along the spinal column.

When first attacked the diet should be light and not too solid; after the more active symptoms have disappeared, it should be more nutritious, and

even stimulating, using spices, aromatics, &c., but no liquors. Flannel clothing should be worn next the skin.

EPILEPSY.

EPILEPSY, or, Falling Sickness, as it is frequently termed, is a disease common to early age, and consists in a sudden deprivation of the senses, or insensibility, with more or less violent contortions or convulsions of the whole system, and as the attack declines, the patient passes into a state resembling a deep sleep, which continues for an hour or two, or longer. It is a chronic disease and frequently ends in insanity.

SYMPTOMS. Epilepsy frequently attacks persons in apparent good health suddenly, without any premonitions, but with many there are several symptoms indicative of an approaching paroxysm, which usually occur a few seconds immediately before the attack, enabling the patient to prepare for it. The most usual warning symptoms are, a heavy pain in the head, dimness of sight, noises in the ears, palpitation of the heart, flatulency, weariness, flashes of light darting before the eyes, or coldness of the limbs; and one or more of these may precede the attack. Frequently there is a sense as of a cold vapor, or the crawling of an insect, which passes from some point of the body or limbs to the head, and when it reaches that part, the attack occurs; this sensation is called the *aura epileptica*. In some cases the patient imagines he sees a specter coming toward him, and falls into a paroxysm as soon as this figure comes in contact with him.

But whether there be premonitory symptoms or not, the patient, when attacked, either falls or is thrown to the ground with convulsions and a deprivation of sense and power. There is generally a shriek, or a strange sound, somewhat resembling the barking of a dog, which accompanies the commencing part of the attack. The convulsions are frequently so terrific in appearance, as even for a time to disturb the calmness and presence of mind of the physician; the muscles of the body act with great violence, distorting the parts affected into various shapes. Thus, the head is jerked to one side, sometimes backward; the face is thrown into very distressing and alarming contortions; the eyes stare, opening and closing rapidly, or are distorted or inverted, the whites of them only being seen; the muscles of the jaws contract and relax alternately, frequently biting the tongue severely when it is thrust forward; the teeth gnash together; the power of swallowing being lost, the saliva is forced out of the mouth in a foam; the limbs are violently agitated and jerked in various directions; the breathing is unequal and difficult; the pulse is usually small and contracted; the urine and feces are frequently voided involuntarily; and the sense of feeling appears to be completely lost. Sometimes priapism and a spontaneous emission of semen takes place. I have seen persons when attacked, reel round and round for a number of times before falling, having the head violently drawn toward that side to which they were rotating, and at the same time uttering a most distressing kind of noise.

After a time, varying from a few minutes to half an hour, or longer, the fit ceases, and the person passes into an apparent deep sleep, from which he gradually recovers, having no distinct recollection of what has transpired from the commencement of the paroxysm. He remains more or less exhausted and sore, requiring one or more days for a restoration to usual health; sometimes a sense of oppression in the head, or stupor will remain for a time; or, perhaps a mild degree of insanity; and, occasionally, apoplexy followed by death will be the result.

This course, however, will be found to vary; with some persons the convulsions may subside, either partially or completely, for a short time, and be again renewed; and this alternation of convulsions and remissions may continue for many hours before they pass off entirely. With others the attack is imperfect; the patient may remain with his eyes fixed and open, pupils dilated, motionless, and for a minute or two be entirely deprived of consciousness, but without falling; or, there may be a roaring sensation in the head, a sense of oppression at the heart, with a feeling of intense alarm which is strongly depicted on the countenance, consciousness, however, remaining, and the business engaged in at the time not being materially interfered with. These mild attacks may occur from time to time, gradually increasing in severity until the genuine epileptic convulsion is established.

An epileptic attack may take place at any time, but more frequently it commences sometime during the night; and it often occurs periodically. The intervals between the attacks vary also; sometimes a single paroxysm happens, and may not be followed by another for months or even years; at other times it will take place regularly once in every month; and again, it will be met with daily, one or more paroxysms occurring every twenty-four hours. In many instances, and especially when the attacks are of frequent recurrence, the constitution becomes impaired, the mental faculties decay, and sooner or later apoplexy, palsy, mania, or idiocy are the consequences.

CAUSES. Epilepsy occasionally exists as an hereditary disease, but more commonly it is an acquired one, and appears to be owing to excessive nervous susceptibility. The exciting causes are numerous, as gastro-intestinal derangement from acid stomach, improper food, worms, &c.; painful dentition; irritation of the womb; falls; blows; wounds; external violence to the head or spine; disease of the brain or spinal marrow; spicula of bone pressing into the brain; the presence of stone or gravel in the kidneys or bladder, or of gall stones in the excretory duct of the liver; suppression of customary evacuations; translation of gout or rheumatism to the brain; and excessive venereal indulgences. It may also be produced by violent affections of the mind, sudden frights, fits of passion, distress of mind, frequent intoxications, excessive hemorrhages, disagreeable or terrific sights, acute pains in any part of the system, poisons taken into the body, and among very sensitive persons the fit has been caused by merely seeing others in a paroxysm. A very fruitful source of epilepsy among women is derangement of the functions of the womb and reproductive organs. Masturbation is a most prolific source of this disease; among thirty-seven epileptic patients, I ascertained that masturbation had been carried to a great extent in thirteen, and moderately in seven.

DISCRIMINATION. Epilepsy may be mistaken for hysteria, or apoplexy. It may be distinguished from hysteria by the foaming at the mouth, the gnashing of the teeth, the biting of the tongue, the hissing breathing, and dark appearance of the face, common to epilepsy, and by the absence of those symptoms common to hysteria, as, the globus hystericus, or sensation as if a round ball were rising to the throat, the involuntary fits of weeping and laughing, the absence of complete insensibility, and the pale countenance. It may be determined from apoplexy, by this being more usual to middle-aged persons than epilepsy, except when there have been previous attacks of the latter; in apoplexy the breathing is stertorous or snorting, the muscles become flaccid and powerless, or if any convulsive action is manifested at first, it is slight, and is not repeated, and the pulse is slow and laborious. In epilepsy, the breathing is hissing, the muscles are violently and continuedly convulsed, and the pulse is usually small and contracted.

PROGNOSIS. The more recent the attack of epilepsy the more curable is it, except in those cases depending upon a deformity or disease in the bones of the skull, tumors, polypi, concretions, &c., of the brain. It is, likewise, seldom cured when it is hereditary, or when it has existed for so long a time as to materially injure the mind. Among children it frequently disappears with those changes of the system which occur at the age of puberty, and with females on the delivery of the first child. Cases are on record in which an attack of intermittent fever, the appearance of the menstrual discharge, or the presence of a cutaneous eruption, have been followed by a permanent removal of the epileptic paroxysms. When it is produced by frights, or powerful mental emotions, it is seldom cured.

TREATMENT. This should be based upon the cause of the disease, if it can be ascertained, and is divided into that of the paroxysm, to shorten its duration, and that of the intervals, to prevent a return. When the patient is attacked with epileptic convulsions, he should be placed as speedily as possible in a position calculated to protect him from injury, and if it can be done, a roll of leather, a soft piece of wood, cork, or other substance not too hard, should be placed between the molar or back teeth to prevent the tongue from being bitten, but there is no necessity for interfering with the movements of the patient, further than to protect him from injuring himself. His neck should be at once freed from all cravats or cloths, and the shirt unbuttoned or loosened, as well as his underclothing generally. A cloth wet with cold water should be laid upon the neck and upper part of the chest, and be renewed frequently, or, in its stead, cold water may be poured upon these parts. Emetics, cathartics, or injections, though they may be indicated, will be found very difficult of administration, on account of the violent muscular movement, and the difficulty of swallowing; which last, however, will be considerably overcome by the cold applications recommended above. But there is one preparation which may be used with advantage, and which should be given as soon as possible,—it is, the Compound Tincture of Lobelia and Capsicum, varying the dose according to the age, from half a teaspoonful for a child a year old, to a table-spoonful for an adult. A finger may be placed in one corner of the patient's mouth, and the lips be drawn outwardly, so as to permit the above tincture to be gradually poured in, and which will be certain to reach the stomach,—or, at least, the greater portion of it will. Should the convulsions continue, the dose may be repeated every ten or fifteen minutes.

When the attacks happen during the night, the application of a cloth wet with cold water, to the neck, either through the night, or just before the period when the attack occurs, will frequently prevent a paroxysm.

After a recovery from the fit, it will be advisable, in cases where there is an over-loaded condition of the stomach and bowels, or a state of constipation, to administer a cathartic.

In those cases where the paroxysm continues for a long time, with convulsions and remissions alternately, in addition to the previously named measures it will be proper during a period of remission, to administer an injection composed of warm water, Molasses, each, half a pint, Salt two drachms, Compound Tincture of Lobelia and Capsicum a fluidounce; mix. And this injection may be repeated from time to time, as the urgency of the symptoms will require. Beside this, counter-irritation should be applied to the feet and extremities. A mixture composed of Spirits, Vinegar, each, half a pint, Capsicum four drachms, Tincture of Stramonium seed four fluidounces, should be warmed and applied on flannel to the back along the whole length of the spinal column, and to the feet and legs; this

should be renewed occasionally, using considerable friction at each time of application. These means combined, will most commonly succeed in relieving the spasms and shortening the paroxysms.

The treatment to be pursued during the interval between the paroxysms, will depend entirely on the cause of the attacks, when this can be ascertained.

If the epilepsy be owing to depression of the skull from injury, to a spicula of bone pressing upon the brain, or to bony excrescences, the only mode of cure is to trephine and remove the obnoxious portion of bone; subsequently strengthening the brain and nervous systems by tonics. Instances are on record, where an operation of this kind has at once removed epilepsies which had existed for several years.

When the epilepsy is sympathetic, and is occasioned by worms in the bowels, means must be used to remove them, such as will be found named under the treatment for Worms, which see.

When teething appears to be the exciting cause of epilepsy, that part of the gums which appears to be inflamed should be cut, passing the gum lancet down to the crown of the advancing tooth; the bowels should also be kept regular, the head cool, and bitter tonics in infusion administered internally, with a light diet. In some cases an anodyne plaster behind each ear will be of service.

If the epilepsy be owing to any derangement of the uterine functions, as may generally be known by an attack occurring at or near the menstrual period, the means hereafter named under these derangements, must be pursued. The most usual difficulties of this kind are too scanty or very painful menstruation. And should the paroxysms be due to any other suppressed discharges, as piles, ulcers, &c., they should be reproduced if possible.

When masturbation is a cause of epilepsy, and especially when it has been long-continued, the cure is always doubtful, and more particularly so, when, with involuntary emissions, we find a decay or derangement of the mental faculties. In no case, however, can a cure be accomplished, unless the habit be at once and permanently given up, and then the means named in the treatment for masturbation, conjoined with that in the following paragraphs must be perseveringly pursued for many months.

In every case of epilepsy when its cause can be ascertained, this should be removed if possible, by appropriate measures, in connection with means to allay irritability of the nerves, and strengthen them. But when its causes are obscure, I have found the most advantage from the course I am now about to mention.

The following pills are to be used daily: Take of Iodine twenty-four grains, Extract of Belladonna six grains, Sulphate of Morphia four and a half grains, Simple Syrup, a sufficient quantity to make a pill-mass. Rub the medicines thoroughly together, forming a very fine powder, then add the Syrup; make a pill-mass and divide into forty-eight pills. One pill is a dose, to be given an hour after each meal, and repeated two or three times each day. Beside these, the following pills must also be used at the same time: Take of Prussiate of Iron, Sulphate of Quinia, Alcoholic Extract of Black Cohosh, each, four scruples; triturate the powders thoroughly together, add the Extract, and form a pill-mass; divide into forty-eight pills, one of which is a dose, to be given an hour previous to each meal, and also repeated three times a day.

If these pills are given in sufficiently large doses to keep up a constant, but not too decided an effect upon the head, as a slight pain, heaviness, or

giddiness, it will be found to answer a much better purpose than otherwise.

In addition to these, the bowels must be kept regular by mild laxatives; and in some cases, a purgative may be administered once or twice a week. If there is acidity of the stomach, some alkaline preparation may be exhibited, among which, in this disease, I prefer the Carbonate of Ammonia. The cold douche should be applied to the head and along the spinal column every morning, or every other morning, as seems serviceable, and at night a stimulant should be applied along the spinal column, and on each side of it, as the Compound Liniment of Oil of Amber, or, the following mixture: Take of Oil of Origanum, Oil of Peppermint, Oil of Amber, Camphor, Tincture of Stramonium seed, each, equal parts; mix together. Firing, every few days, over the spine from the base of the skull to the last vertebral bone, will frequently be found very advantageous; and, in some cases, the Compound Tar plaster applied, first over the base of the skull and upper part of the neck, and then between the shoulders, alternating its site from time to time will be productive of the most happy effects with some, while with others it will seem to aggravate the disease. A mild current of electro-magnetism passed daily through the brain and spinal marrow, will be of much service in nearly all instances.

The diet in epilepsy should be light, nutritious, and easy of digestion, avoiding fats, acids, liquors, and food disposed to cause flatulency. Animal food should be used moderately, tea and coffee abstained from, and in their place the patient may drink the following infusion: Take of Scull-cap, Peony root, Valerian, Peach leaves, each, one ounce, Sassafras three ounces; mix. A teaspoonful of this mixture, in powder, may be added to half a pint of boiling water, infused for a few minutes, sweetened, with milk added if wished, and drank. This may also be used as a constant drink through the day. The hours for sleep and rising should be properly regulated, the exercise should be regular but gentle, avoiding all improper exposures, as well as all mental excitement, violent passions, &c. The surface of the body must be bathed once or twice a week with a weak alkaline solution, with considerable friction, when drying, by a second person; the head should be kept as cool as possible; the cold shower bath daily is generally useful; and it will be well for all epileptics to avoid dangerous places, lest a fit should come on, and they be precipitated to the ground,—as, standing or working upon houses, ladders, and precipices, or near deep ponds, rivers, &c.

Sometimes it may be found advisable to change the Iron and Quinia pill above advised, or, to use it alternately with some other agents; and among those which have proved the most beneficial in my own practice, are the following:—

1. Take of Extract of Stramonium three grains, Valerianate of Quinia twelve grains, Alcoholic Extract of Black Cohosh twenty-four grains; mix, and divide into twenty-four pills. One pill is a dose, to be repeated three or four times a day.

2. Take of Extract of Water Pepper, Extract of Indian Hemp, (*Cannabis Sativa*), Extract of Stramonium, Sulphate of Quinia, each, one drachm; mix thoroughly together, and divide into sixty pills. The dose is one pill, to be repeated four times a day.

3. Take of bruised Stramonium seed, Assafetida, Lupulin, Powdered Black Cohosh root, each, one ounce, Spirits one quart. Macerate for fourteen days, frequently shaking. This forms a very valuable preparation for this disease, which I have found second to none; the dose to an adult is a table-spoonful three times a day.

Among the agents which have been highly recommended in this disease, may be named, Ice plant, Peony, Blue Cohosh, Ladies' Slipper, Skunk Cabbage, Rue, Masterwort, Round Leaved Pyrola, &c. The following is the formula for a preparation which has acquired considerable reputation in curing epilepsy: Half fill a gallon bottle with equal parts of green Rue and Garlic, add Assafetida seven ounces, and fill the bottle with old Whisky. In a few days it will be fit for use. Dose, a wineglassful every morning, on an empty stomach, and also on going to bed.

CATALEPSY.

CATALEPSY is that condition in which, without any fever necessarily, a person loses the power of voluntary motion for a longer or shorter time, with a partial or complete suspension of the five senses; the muscles being sometimes rigid, and at others movable, keeping the position in which they were when attacked, or in which they may be placed by other persons subsequently. It continues for a longer or shorter time, when it subsides, leaving the person in his usual health, but without any recollection of what has passed; it very much resembles the condition produced by mesmerism.

SYMPTOMS. In a few instances premonitory symptoms are present, as headache, giddiness, flushed face, pain in the breast, lassitude, yawning, flatulence, forgetfulness, depressed spirits, &c. But more commonly the attack is sudden, the patient remaining in the position he held at the time of the attack, being unable to move, and if a limb is moved by another person, or an eye opened, &c., it remains so, fixedly. I have, however, witnessed instances wherein patients would move about and converse with others, having no recollection of these events upon recovering from the cataleptic condition. There is always a partial or complete suspension of the senses. In some instances, if the paroxysm comes on while the patient is conversing, or in the performance of any other continuous act, he will resume the thread of the conversation, or even finish the half-pronounced word, or continue his acts, as soon as the paroxysm is over, apparently being unaware that any interruption has taken place. A *trance*, as it is called, and a *state of ecstasy*, are cataleptic conditions. Catalepsy is seldom dangerous, and sometimes is followed by the cure of previously existing diseases of the brain and nervous system, as epilepsy, hysteria, &c. Occasionally it is followed by epilepsy, apoplexy, or melancholy, and may terminate fatally in a few days, and these will be more apt to follow any violent efforts made by friends to recover the patient from the cataleptic state. Very rarely it is followed by death.

CAUSES. These are not well understood; suppressed menstruation, worms, painful emotions of the mind, deranged condition of the stomach, intense study, excesses, constipation, &c., have been named as the exciting causes.

TREATMENT. Catalepsy requires no treatment during the paroxysm, unless there are certain symptoms demanding it, as determination to the head, palpitation of the heart, feeble pulse, &c. Generally, it is better to let the patient alone until she recovers from it spontaneously. I have seen a mesmerizer make his mesmeric passes for a few minutes over a cataleptic patient, and immediately after, either awaken them, or, be able to converse with them freely during the paroxysm; and I have seen night-somnambulism cured by the same method—but I do not profess to understand how or why this peculiar influence was effected.

When catalepsy occurs frequently, and is accompanied with debility or some derangement of the system, remedial measures may be pursued during the intervals. The deranged condition, whatever it may be, must be appropriately treated, the bowels kept regular, the skin in a clean, healthy state, moderate exercise should be taken daily, and internally, tonics, antispasmodics, (and in anemic cases, Chalybeates,) should be administered daily, with a diet adapted to the wants and condition of the system. Sudden, rude, or violent attempts to recover one from this state are highly improper.

CONVULSIONS, OR FITS OF CHILDREN.

THE brain and nervous system of an infant, especially previous to its third year, owing to their immaturity and delicacy of structure, are extremely impressible and liable to derangements, from which convulsions will readily ensue, on the application of even the slightest exciting causes. The most formidable, and probably the most fatal diseases to which infants are subject, are convulsions, which attack those of different constitutions, at all ages, and under diverse circumstances. They may be connected with disease of the head and spine, and they may occur during the course of fevers or other diseases.

SYMPTOMS. In most cases the infant is dull, heavy, and feverish for a day or two previously, or it may be restless and irritable with an uncertain oscillation of its eyes, or an occasional wide stare, more or less debility, disordered and irregular respiration, and a spasmodic turning in of the thumbs. Sometimes the attack is sudden without any premonitions. The child falls into a state of unconsciousness with more or less violent spasmodic action of the muscles of the limbs and face. The mouth, cheeks, &c., are thrown into irregular and distorted action, being jerked in different directions; the eyes are either stationary, or roll about in every direction; the pupils may be either contracted or dilated; the jaws are forcibly closed, or only moved laterally, so as to grind the teeth; the head is thrown strongly backward, or to one side, or it is rapidly rotated from side to side; the child frequently froths at the mouth, and respiration has a short, broken, hissing sound; the muscles of the back are rigid, or act with sudden or irregular jerks; the arms are half bent, or thrown about irregularly, and the hands are clenched with the thumbs usually turned into the palms of the hands; the legs are similarly but less severely affected, and the feet are generally bent upward and inward. The face becomes livid, the pulse small and hard, often irregular, and from 100 to 160 in a minute; the head is usually hot, the feet cold, and not unfrequently a cold, clammy perspiration breaks out upon the head, face, and neck. Frequently the feces and urine are involuntarily evacuated. These symptoms vary considerably with different children, both in number and severity; and the attack may occur during sleep, or in the waking state. The convulsion may last for only a few seconds, five or ten minutes, or several hours; the convulsive agitations gradually cease, the face becomes pale, the eyelids closed, the limbs flaccid, breathing calm and regular, the pulse slower and weak, and sleep supervenes, from which the child awakes conscious and intelligent, but frequently dull and exhausted. The fit may terminate here, or it may return again after longer or shorter intervals, and ultimately destroy the patient. Sometimes, only a part of the body will be affected; and at other times the convulsive paroxysm will be imperfect, giving rise to what is generally termed "inward fits," in which the eyes are half-closed with the globe turned upward, the breathing is disturbed, the

child cries or moans almost constantly, and is apt to give spasmodic starts frequently without any apparent cause, and during which there is a slight but transient rigidity of the limbs, with the fingers firmly clenched, or widely separated. Finally, vomiting or purging come on, and some relief is obtained.

During the period of teething, if the child becomes fretful and restless, with capricious and irregular appetite, continual rubbing of the nose and eyes, considerable fever through the night, with hard and swollen belly, both of which disappear as sunrise approaches, startings during sleep, with heavy or difficult breathing, and a slight dilation of the pupil of the eye on awakening in the morning, with a dull appearance of the eye—these are premonitory symptoms of a convulsive attack.

It is seldom that the first paroxysm occasions death; but if the cause of the disease is not removed, and continues its influence, the child will not recover its natural sprightliness, but will continue dull and uneasy, and fit will follow fit, with a certain length of intervals between, until the little sufferer is relieved by death.

CAUSES. Anything which will irritate or derange the brain and nervous system will give rise to convulsions in children. The most frequent causes are, improper food, overloading the infant's stomach, unhealthy milk of the mother or nurse, want of cleanliness, teething, worms, falls or blows on the head, flatulence, recession of rash, measles, small-pox, &c., sudden mental emotions, &c.

It has been supposed by many medical men, that in children who are subject to convulsions there must be a peculiarity of constitution, which may have been transmitted from their progenitors, who were themselves, when young, similarly disposed; to a certain extent this may be correct, for we find that in nearly all cases of disease, the peculiarity of the formation and of the constituent properties of any organ or organs, and their relation with the blood, give rise to the particular character, location, and form of disease to which every individual is predisposed. Hence, the exciting causes which would produce convulsions in one child, may cause pneumonia, or hydrocephalus, &c., in another, while others would remain unaffected.

Convulsions will at times attack nearly all the children of a family from parents who were always exempt from them. This is more particularly the case where a strumous diathesis exists in one or both of the parents, or where they have injured their nervous powers by excesses, debaucheries, masturbation, intemperance, &c. Cohabitation during pregnancy is almost certain to injure the offspring, and render it liable to this form of disease.

TREATMENT. This must vary according to the exciting cause, when it can be ascertained. If convulsions arise from teething, the child must be placed as soon as possible in a warm bath; but as some time may elapse before this can be prepared, the Compound Tincture of Lobelia and Capsicum must be given in doses of from fifteen to thirty drops, for a child a year old, and repeated in ten minutes if the fit does not cease. In a majority of cases the first dose will break the fit immediately. As soon as the fit ceases, and after having employed the warm bath, Mustard poultices should be applied to the feet, and as soon as convenient a purgative should be administered; the Entozoic Powder is decidedly the best, because, should worms be present, it counteracts their pernicious effects. The gums should also be cut by one who is well skilled. I am aware that many are opposed to cutting the gums, but I have always found it the best course to pursue; it allays the irritation, and, of course, lessens the disposition to a return of the fit, and has, in many instances, been the means of saving the child.

There is no foundation for the common idea that cutting the gums may destroy the child by bleeding to death; as this can only happen when the child has a hemorrhagic diathesis, (that is, a want of sufficient coagulable substance, from which cause, as no clot or coagula can form, the blood continues to flow,) which is a very rare case, or when some bungler not acquainted with his business should cut in an unskilful manner.

The after-treatment should be mild laxatives every day, and tonics, with an anodyne or strengthening plaster behind the ears. The following tonic tincture will be found useful: Take of Gentian, Golden Seal, Balmony, each, in powder, one drachm, Cardamom seeds, Sassafras bark, Prickly-Ash berries, each, bruised, half a drachm, good Cognac Brandy half a pint; mix together, and let them stand a few days; the dose is half a teaspoonful or a teaspoonful, in sweetened water, three times a day.

When the convulsions depend upon worms in the intestines, some Salt and water may be given as soon as the child can drink, and adopt a course similar to the above; the following injection must be given as soon as it can be made, and repeated at intervals of one, two, or three hours; take of Balmony an ounce, Mandrake two drachms, water half a pint; boil together, then strain, and add Tincture of Assafetida half a fluidounce, Molasses four fluidounces, Salt two drachms. Inject a quantity suitable to the age of the child.

When the convulsions originate from acrid, irritating substances in the stomach, as unripe fruit, &c., the Compound Tincture of Lobelia and Capsicum must be given, together with the following injection:—Take of Boneset two parts, Senna one part, water sufficient to make a strong decoction; to each pint of the decoction add four drachms of Salt, and a drachm each of powdered Bayberry bark and Lobelia. This injection must be used every ten or fifteen minutes, in quantities adapted to the age of the child. Cloths wet with as warm water as can be borne, constantly applied to the stomach and bowels, and changed often; *Mustard draughts* may also be applied over the stomach and bowels, frequently renewing them; they may also be placed to the soles of the feet. This course must be perseveringly and energetically pursued until the termination of the fit, without in the least changing or altering the treatment, even if the convulsions should wholly or partially continue for several hours.

When convulsions appear, and the cause is unknown, they should be treated by first administering the Compound Tincture of Lobelia and Capsicum, until they cease, or until the child can freely swallow; for the sooner we destroy the spasmodic action, the less is the danger to be apprehended. As soon as the child is so far recovered as to be able to swallow, the Compound Tincture of Lobelia must be administered in doses to produce vomiting; after which the above Assafetida injection must be given, and Mustard poultices be applied to the feet. In all cases where there is an accumulation of mucus or phlegm, give the Compound Tincture of Lobelia, to vomit as soon as possible.

If there is a constant and rapid succession of convulsions, cloths must be applied, as above mentioned, over the stomach and bowels; the injections must be repeated once at least in every twenty minutes, with half a fluidrachm of the Compound Tincture of Lobelia and Capsicum added to each; and the same tincture must be repeated every ten or fifteen minutes, or every half-hour, as the urgency of the case may require; cold water and Vinegar should be applied to the forehead and temples, if they be hot. This is a very active form of convulsions, and must be treated actively and with energy, never desponding or ceasing while life exists. In some cases,

I have had to continue the above course for from six to twenty-four hours, before gaining the least apparent advantage over the disease. In the great majority, however, in from thirty minutes to an hour, the child will be safe and free from convulsions.

In all cases of convulsions, and after the emetic has operated, a purgative should always be administered; the Entozoic powder is the best, and answers a two-fold purpose, as a purgative and as a vermifuge, should worms exist in the bowels, and which may be employed for several days afterward; after which give the above tonic tincture. If this powder cannot be administered, the Compound Powder of Jalap will answer.

When convulsions occur from a recession, or "striking in" of the eruption of measles, scarlet fever, &c., in addition to the above treatment, perspiration must be produced by the warm bath, and maintained by the administration of warm infusions of simple herbs, &c.

It sometimes happens that after a convulsion, the child becomes unable to pass his water, for which he may be placed in a warm bath, and kept there for ten minutes, and then onions or garlic, pounded, and slightly warmed, but without in the least cooking them, must be placed over the region of the bladder, and Marshmallow root, Parsley root, Cleavers, or Pumpkin seed tea administered freely.

If a troublesome cough, either dry or attended with considerable phlegm or mucus, succeeds an attack of convulsions, the best remedy that can be used is the Compound Syrup of Spikenard.

When the stools are slimy and green, a little Supercarbonate of Soda may be given several times a day, dissolved in water; or Soot tea will be found of much benefit; it may be sweetened, and some essence of Peppermint or Spearmint added. The Compound Syrup of Rhubarb and Potassa will also be found beneficial.

After the convulsions, or during the intervals between them, every care must be taken that the child's diet is of the proper character; if he nurses, the mother must ascertain that there is no cause existing with her which demands the weaning of the child. Unripe fruits, fruits having skins or kernels which are difficult of digestion, should not be permitted to either the child or the mother if nursing; the bowels should be kept free; and due pains be taken to strengthen the nervous system by exercise in the open air, and by the tepid or cold bath. Where the predisposition laid in organization is considerable, the only safety for the child is in avoiding the exciting causes.

When convulsions occur from a fall or blow on the head, they are apt to prove fatal; although the above treatment has been the means of saving many. When a child has received a severe fall or blow on the head, cold water should be immediately applied to the head, either by pouring it from a short distance above, or by means of cloths, and it should be continued for fifteen or twenty minutes; then apply Mustard poultices to the feet, back of the neck, and over the pit of the stomach, allowing them to remain until they produce considerable redness; after which administer a dose of the Compound Powder of Jalap.

A treatment similar to the above must be pursued in those convulsions which often occur in children and adults, from recession of exanthematous eruptions, &c., and which assume no specific character.

HYSTERIA, OR HYSTERICUS.

HYSTERIA, or Hysterics, is a spasmodic affection common to females, and very rarely met with in males. It appears under such various shapes, and with so many symptoms, that it will be almost impossible to give a special definition of it; it must be described by taking all its symptoms collectively, or rather the most prominent among them. It attacks pregnant as well as non-pregnant females, and however alarming a paroxysm may appear, it is seldom attended with danger, unless it merges into epilepsy. Retention of urine is to be feared in a long-continued paroxysm of hysteria.

SYMPTOMS. Usually, the female from a calm or excited condition, but in which no symptoms of disease are manifested, by an unlucky word, and often from no apparent immediate reason, commences crying and laughing at intervals, perhaps also venting reproaches; peal upon peal of immoderate crying and laughter, sobs, floods of tears, stolid silence, wringing of hands, tearing of hair, clonic convulsions, tonic spasms, and smiles, are all wildly and irregularly combined, and followed by a profound calm of the constitution, and a feeling of complacency. During these symptoms the female, at the commencement, is attacked with a sense of tightness about the throat, with sobbing, or repeated attempts at swallowing. Sometimes a sensation as if a ball passed upward to the throat and lodged there, is experienced, and which is called the "globus hystericus."

She may roll about from side to side, or she may lie perfectly still and motionless. She frequently presses her breasts with her hands, or carries them to the neck as if to remove some obstruction. The face is usually pale, though not always, and is not distorted; no froth issues from the mouth, nor are there convulsive motions of the lower jaw, but the large muscles of the back are violently contracted, so as in many instances to cause the body to describe an arch backward. The trunk of the body is twisted forward and backward, the limbs are variously agitated, and the fists are firmly closed. Sometimes there is obstinate constipation and retention of urine, at others the urine is copious and of a pale color. More or less flatulency, with a rumbling sound in the bowels, is very apt to be present.

The paroxysm continues for a longer or shorter time, the sobbing becomes more violent, or the patient screams and sheds tears, and thus the fit ends. Sometimes they will lie apparently insensible and immovable for a longer or shorter time. The attack is often preceded by dejection of spirits, anxiety, yawning, effusion of tears, difficult breathing, nausea, palpitation of the heart, numbness of the extremities, &c.

It is not uncommon for hysterical patients to complain of dreadful and excruciating pain in the hips, knee, spine, &c., with excessive tenderness to the touch, and which are owing to severe muscular contraction, instead of any disease of the parts. I know of one female who was nearly destroyed by treatment for uterine inflammation, when the whole difficulty was hysterical contraction of the muscles of the thigh and abdomen, causing considerable soreness in the parts. Sometimes, a species of paralysis accompanies hysteria; and, occasionally, females will imagine many strange things, and even practice more or less deception, speaking in a whisper, pretending to vomit blood, meat, &c., &c.

In some women, and especially during pregnancy, with a very slight warning, they may be attacked with a severe fit of hysterical convulsions, which may occur daily, every other day, or at longer intervals, and which if not removed will induce a miscarriage, which usually occurs at the time of the fit.

CAUSES. Hysteria may be produced by various causes, as want of sleep, excessive fatigue, disordered digestion, sudden mental shocks, as joy, fear, grief, &c.; excitement of the reproductive organs, or of the venereal sense, indolence, high living, sedentary habits, &c. Females of an irritable, nervous system, are most subject to it, and those who are single or widows more so than the married; and the paroxysms occur oftener about the period of menstruation than at any other time. Excessive discharges and exhausting diseases, frequently give rise to attacks of hysteria, which occur during convalescence, and are renewed subsequently upon the slightest causes.

DISCRIMINATION. Hysterical convulsions may be determined from epileptic by observing that in the latter there is no frothing at the mouth, no protrusion of the tongue or biting it, and after the paroxysm is over, the patient recovers her usual state, and does not fall into a sleep as in epilepsy. From apoplexy, by observing that in this the patient loses consciousness and voluntary motion first, and finally all motion ceases, and the breathing is stertorous. From puerperal convulsions, by observing that in these the actions of the muscles are violent and irregular, the head is strongly rotated to the right or left, and backward, with violent jerking contractions of the muscles of the back, abdomen, and upper and lower extremities; spasmodic action of the muscles of the face is rapidly repeated; the lips and teeth are firmly closed; the breathing is loud and hissing; the tongue is very livid, protruded forward, and often bitten, so that the blood and saliva is thrown to some distance through the compressed lips; the face becomes livid; and the attack usually occurs in first labors among females with short, thick necks.

TREATMENT. The treatment will be 1st., to overcome the paroxysm; 2d, to adopt means during the interval which will strengthen the nervous system and lessen its excitability, and thus prevent a return of the attack.

During the paroxysm in mild cases, a teaspoonful of the Compound Spirits of Lavender may be added to a little sweetened water and administered, and this may be repeated every five, ten, or fifteen minutes, as the case may require. The dress, and all tight strings must be loosened, and the female placed where there is a free admission of air. In severe cases, the Compound Tincture of Lobelia and Capsicum may be given, in doses of from a teaspoonful to a table-spoonful, repeated every ten or twenty minutes. Or, the following heterogeneous mixture will be found especially useful, notwithstanding its singular construction:—Take of Skunk Cabbage root, Scullcap, Ladies' Slipper root, Lobelia, each, half an ounce, Capsicum two drachms, Alcohol one pint, Compound Spirits of Lavender half a pint, Ether, Ammonia, each, four fluidounces; mix together, and let it stand fourteen days, frequently agitating; keep it in a well-stopped bottle. The dose is from one to three teaspoonfuls, repeated as required.

Patients in apparently the most distressing hysterical spasms, are yet very sensible of what is passing around them, and this may frequently be taken advantage of to lessen a fit, by arousing their fears in some way. One practitioner says, that among married females he has frequently terminated the paroxysm by pushing up the uterus into the upper part of the pelvic cavity, as far as possible, and holding it balanced upon the end of the index finger. The only cause of the benefit in such cases is, the mental or moral impression produced upon the patient.

As a general rule it is better not to interfere with the movements of an hysterical patient, further than to prevent her from injuring herself; and any attempts to subdue a paroxysm by bleeding, or violent or forcible measures are extremely improper. If the bowels are costive, and the par-

oxysm is of long continuance a purgative injection may be given, as the one named under epilepsy, page 352. Sometimes, cold water dashed over the extremities and face is attended with a good effect.

The treatment in the intervals between the fits, will be to keep the stomach and bowels in a healthy condition, obtaining one alvine evacuation daily, to keep up the functions of the skin by bathing and friction, and to improve the condition of the nervous and uterine systems by one of the following agents:—

1. Take of Aletridin twelve grains, Senecin twelve grains, Sulphate of Quinia six grains; mix together, and divide into twelve pills. The dose is one pill, repeated three or four times a day.

2. Take of Extract of Belladonna one grain and a half, Sulphate of Quinia six grains, Alcoholic Extract of Black Cohosh eighteen grains; mix together, and divide into twelve pills. The dose as above.

3. Take of Aletridin twelve grains, Senecin twelve grains, Alcoholic Extract of Nux Vomica one grain; mix together, and divide into twelve pills. The dose is one pill three times a day.

4. Take of Aletridin twelve grains, Dioscorein twelve grains, Capsicum twelve grains; mix together, and divide into twelve pills. The dose as above.

5. The Compound Syrup of Partridge berry.

Whichever of these agents are used, they must be persevered in, and if the patient is of a strumous habit, an alterative with Iodide of Potassium must be administered; or, if she be anemic, some preparation of Iron. When any tenderness is discovered along the spinal column, counter-irritation should be applied every day or two, as the Compound Liniment of Oil of Amber, dry Cupping, or Firing. Among the agents recommended in this disease are powdered Valerian, fifteen grains for a dose; Castor; Musk; Assafetida, &c., but these seldom effect cures.

The diet should be nutritious and of easy digestion, avoiding acids, grease, flatulent food, and pastry. The mind of the patient should be kept constantly easy and cheerful, and occupied if possible in some pleasant pursuit; exercise must be taken daily, all high living avoided; and, where it produces no bad influence, an occasional douche to the head and spine, or, a cold shower-bath, will be found decidedly beneficial. Idleness is a great cause of renewed paroxysms.

When hysterical convulsions occur during pregnancy, the Compound Tincture of Lobelia and Capsicum should be administered in doses of from a teaspoonful to a table-spoonful, repeating them every ten or twenty minutes, until the paroxysm subsides. If the first dose be large enough, it will commonly afford relief without any more being required; sometimes, however, a second, or a third dose may be necessary. During the intervals between these hysterical attacks, the diet of the patient must be regulated, giving her a hearty, nourishing, but easily digested food, with some pleasant stimulant, if the patient be weak, as Ale, Porter, or Wine, &c., in moderate quantity; the bowels must be kept regular, obtaining a daily evacuation from them; and this course should be pursued until delivery takes place. All influences tending to depress or excite the mind must be avoided, the patient should be kept in a calm and tranquil state, powerful medicines as cathartics, sudorifics, &c., are inadmissible; and cohabitation during the remainder of the pregnancy must be positively abstained from. At the time of labor a vial of the above tincture should be at hand, to promptly subdue any paroxysms which may take place at that time, by its immediate administration.

SAINT VITUS' DANCE.

SAINT VITUS' DANCE, or Chorea Sancti Viti, is a singular disease, which may occur at any period of life from one year old and upward, and is much more common among females than males. Although a disagreeable affection, it is rarely attended with danger, unless complicated with epilepsy, or some other serious disease. It may affect only one part of the system alone, or, more frequently, several.

SYMPTOMS. Chorea is frequently preceded by a changeable, and often a voracious appetite, loss of sportiveness and spirits, a swelling and hardness of the abdomen, with more or less obstinate constipation. Convulsive movements, or rather twitches of the fingers, muscles of the face, or other parts of the body, are observed, being at first very slight, but gradually increasing, and extending themselves so as to interfere with walking, speaking, and even mastication. These movements are involuntary and irregular, varying much in different individuals, sometimes affecting one complete half of the body. Some of them border much upon the ludicrous, especially when the disease is limited to the muscles of the face, and are very mortifying to the patient. The face may be contorted into various shapes, looking as if the individual was making "wry faces," on purpose; the head may be constantly in a state of motion, trembling, moving up and down, or occasionally drawn suddenly and momentarily to the right or left; the gait will be very unsteady, or the leg dragged along in an awkward manner. The bowels are almost always constipated, and as the disease advances we occasionally find an impaired appetite and digestion, flaccidity and wasting of the muscles, and sometimes a debility of the intellectual powers, to such a degree as to threaten idiocy. Fever is not necessarily present, the pulse is about regular, the skin cool, and very seldom any pain or distress.

Children laboring under this affection are very apt to be capricious, fretful, and easily alarmed; the motions becoming much more severe when they meet with any opposition or contradiction. The motions are less marked, and frequently entirely suspended during sleep, while the brain is occupied in its own acts.

CAUSES. These are not well understood; sex and age appear to have much influence in predisposing to it, as females are more liable to it than males, in the proportion of three to one, and it more commonly attacks those of the ages from five to fifteen years. Among the exciting causes may be named, powerful mental emotions, worms, fright, falls, blows, suppressed eruptions or customary discharges, rheumatic translation to the membranes of the spinal cord, excessive venery, masturbation, and other causes productive of debility and extreme irritability of the nervous system. In all the cases which I have seen, I have not yet met with one, except in persons of a strumous diathesis.

PROGNOSIS. If the disease be neglected it may lead to more serious results, but if treated properly, it may almost invariably be cured—except when complicated with other affections of a severe and extensive character. When the mind shows evident impairment, a cure is always doubtful. When chorea is complicated with other diseases, as chlorosis, hysteria, amenorrhea, dysmenorrhea, rheumatism, erysipelas, cerebral affections, &c., these maladies must be treated in precisely the same manner as if the chorea were not present; and after their removal or amendment, the chorea may be treated.

TREATMENT. The indications in treatment, are to keep the intestinal canal in a healthy condition, relieve the nervous affection, and remove any existing complications.

For the first few days of treatment, it will be proper to unload the alimentary canal of all accumulations by some purgative medicine, as the Compound Pill, or Powder of Leptandrin, either of which I prefer, in this disease, to any other known purgative. After the bowels have been thus evacuated daily for a few days, they must subsequently be kept regular by procuring one, but never to exceed two daily evacuations, approaching as nearly as possible to natural, healthy discharges; for this purpose, two parts of Rhubarb may be mixed with one part of Bicarbonate of Potassa, and from three to fifteen grains, according to the effect, be administered in a little water, for a dose, repeating it three times daily. If the bowels do not readily respond to the action of this powder, from one-twelfth to the one-twentieth of a grain of Alcoholic Extract of Nux Vomica may be added to each dose, for an adult.

To relieve the nervous affection, &c., the following measures will be found useful; as a constitutional means to remove a strumous condition, and anemia, which are commonly present, administer a pill composed of Iodine twelve grains, Sulphate of Morphia one grain and a half, Iron by Hydrogen twenty-four grains, Extract of Liquorice, a sufficient quantity to form a pill-mass; mix thoroughly, and divide into twenty-four pills. The dose for an adult is one pill, to be repeated two or three times a day. To influence the brain and nervous system, one of the several agents about to be named will be found very useful, and in long standing cases it will be advisable to occasionally change them that the system shall not become habituated to them. 1. The Compound Pill of Black Cohosh may be used, and it is the one which I more generally employ. 2. The Compound Pill of Valerian. 3. The Compound Tincture of High Cranberry bark. 4. In a few rare cases, especially when there has been a tendency to numbness or paralysis, I have found very advantageous a pill composed of Extract of Belladonna one-eighth of a grain, Strychnia from one-twentieth to one-fortieth of a grain, Alcoholic Extract of Black Cohosh two grains; mix, make a pill. One of these pills to be given three times a day. In a majority of cases a very gentle electro-magnetic current passed through the brain, spine, and affected muscles, will aid materially in hastening the cure.

The diet should be full, nutritious and easy of digestion, avoiding acids, grease, coffee, and liquors; the body should be bathed with a weak alkaline solution once or twice a week, and every night and morning friction with a coarse towel or flesh-brush, so as to produce an agreeable glow on the surface, should be performed by a second person. Moderate exercise should be taken regularly every day, and the patient should avoid company and all associations calculated to mortify or excite, and thus increase and perpetuate the motions. The shower-bath may be useful in some instances, but it must be used with care, as I have seen the disease very much aggravated by it. When it is associated with worms, rheumatism, &c., pursue the treatment named for these.

I have known cures of St. Vitus' Dance effected by the following simple means:—Take of Horse-radish root, White Mustard seed, each, half a pound, hard Cider one gallon; mix, and let the mixture infuse for a few days before using. The dose is from half a wineglassful to a wineglassful three times a day. In conjunction with this, give from half a teaspoonful to two teaspoon-

fuls of a preparation composed of Russian Castor two ounces, and Port Wine two pints; repeat the dose three or four times a day.*

CRAMP.

CRAMP is a sudden, violent, and very painful contraction of a muscle or muscles, which is more generally experienced in the lower extremities, being symptomatic of debility or other disease. It may also attack the muscles of the neck, and the stomach. When the stomach is attacked with cramps, it is sometimes of a dangerous character; there is a sudden, violent, and most painful spasmodic action of the muscular coat of the stomach, with a sense of constriction in that region.

CAUSES. The most usual causes are sudden exposures to cold, damp, or night air, drinking cold liquids during great heat or perspiration, eating crude and indigestible food, and debility of the nervous and muscular system, caused by masturbation, intemperance, excesses, idleness, &c.

*Miss H—, aged 19, was afflicted with St. Vitus Dance, of sixteen years standing, during which time, her friends informed me that she had consulted various physicians in this country and Europe, had been bled, cupped, blistered, mercurialized, tested nitrate of silver, ammoniated copper, &c., &c.; cold shower-baths had been used until they caused convulsions, and music, so highly recommended by some writers, was of no avail; in fact, they informed me that the invariable result of the treatment which she had undergone was an aggravation of her symptoms, and they were almost fearful to subject her to any new treatment. I found her excessively debilitated, the mental energies somewhat impaired, the thumbs and fingers incessantly in motion, the head constantly shaking, and every two or three minutes the mouth would be rapidly and convulsively drawn to the left side of the face, accompanied with an audible noise, somewhat resembling that produced by sucking in the air. When seated, her feet were not in motion, but while walking, they were involuntarily thrown in all directions, yet not to interfere with her walking. In addition to this, she was laboring under chronic erysipelas, and had, beside, an almost insurmountable repugnance to anything bearing the most distant relation to medicine, from the fact of having taken such immense quantities of it, at various times, without the smallest iota of benefit; and it required much coaxing and argument to persuade her to try a new course of treatment.

As the bowels were constipated, with acidity of stomach, the Compound Syrup of Rhubarb and Potassa, was given three times a day, in doses sufficient to produce one, but not over two evacuations daily, and this course was continued for two weeks, and she was then placed upon the following treatment:—Take Alcoholic Extract of Black Cohosh one scruple, Alcoholic Extract of Scullcap two scruples, Alcoholic Extract of Nux Vomica one and a half grains; mix thoroughly together, and divide into forty pills. One of these to be given every two hours, or six pills daily. The only change made in this prescription, was the gradual increase of the Extract of Nux Vomica to four or five grains to the above quantity, and then decreasing again to the original quantity, and so on alternately. The Compound Syrup of Rhubarb and Potassa was administered whenever the bowels manifested a disposition to constipation, or whenever, as shown by the white coat on the tongue, acidity of stomach was present. The only restriction in diet was the avoidance of fat and acids; the whole body and limbs were bathed once every week with a warm, weak alkaline wash, and once in every two weeks, a Spirit vapor bath was used. Dancing, jumping, and similar exercises in the open air was advised, and as little attendance as possible at crowded assemblies. Coffee and tea were prohibited, but in their place a warm infusion of Peach leaves and Scullcap, the use of which soon became agreeable to her.

This course was continued for about ten months, when all the involuntary motions ceased, with the exception of that of the thumbs, which proved exceedingly obstinate. At this time, in addition to the above treatment, I ordered the following pill:—Take of Red Oxide of Iron twenty-four grains, Iodine six grains, Sulphate of Quinia twelve grains, Extract of Liquorice a sufficient quantity; mix thoroughly, and divide into twelve pills. Dose, one pill, to be repeated three times daily, for three weeks, after which, one pill night and morning.

Soon after the use of this last pill, she commenced improving rapidly, her appetite became regular, as well as the bowels; her strength gradually returned, and the improvement in her mind was very marked; and the erysipelatous affection which appeared from time to time, did not again manifest itself. She was thus treated for nearly two years, before being cured of her distressing affection; yet I believe her recovery would have been more rapid, were it not, that during this time, she was attacked with a painful affection of the chest, which lasted for several weeks: afterwards with inflammatory rheumatism, accompanied with severe pain in the head, and occasional delirium, and in a few months after this last, an obstinate attack of acute hepatitis. This case was cured about fifteen years ago, since which time she has remained in excellent health, and the cure is undoubtedly permanent.

TREATMENT. When the cramp is in the calf of the leg a ligature may be placed around the limb above the affected muscles, and apply friction to the parts with the naked hand, or with some stimulating or camphorated liniment, as the Compound Tincture of Camphor. Most persons overcome cramp in the legs by drawing the top of the foot as closely as possible toward the shin, and holding it thus until the spasm passes off, and which occurs usually in two or three seconds.

When cramps occur in the muscles of the neck, the parts may be rubbed with the Compound Tincture of Camphor.

When the cramp is in the stomach it may be overcome by applying strong friction over the region of the stomach, and continuing it for some time, rubbing over the part at the same time, a mixture of equal parts of Laudanum, Tincture of Camphor, Essence of Peppermint, and Oil of Amber, or the Compound Liniment of the Oil of Amber. At the same time should be administered internally, either the Compound Cajeput Mixture, Ammoniated Tincture of Castor, Compound Tincture of Lobelia and Capsicum, or Compound Tincture of High Cranberry bark, in their appropriate doses. In some, cases relaxing doses of the Tincture of Gelsemium will be of service.

Gastrodynia, commonly termed spasm or cramp of the stomach, frequently occurs during pregnancy, attacking very suddenly. It may frequently be traced to some irregularity of diet; though the action of cold will induce it, as well as violent emotions of the mind. It is more transient in its character, but at the same time more severe and painful than heartburn. In this form there are violent neuralgic pains darting through from the sternum to the back and shoulders, and not as in heartburn, confined to the stomach; there is great distention and flatulence, and the patient is restless and anxious. It may be sufficiently severe to bring on premature labor, or cause the death of the fetus; and, both from this cause as well as from the great severity of suffering, it requires much more speedy and energetic treatment than heartburn. The bowels should be at once evacuated by a laxative injection; and warm fomentations of bitter herbs should be placed over the region of the stomach, followed by a Mustard poultice. Internally, the Compound Powder of Ipecacuanha and Opium, may be administered as often as required; and in some cases, to lessen the spasm, the Compound Tincture of Lobelia and Capsicum will answer a better purpose. If the complaint is protracted, and the attacks of frequent occurrence, a combination of Sulphate of Quinia with Tincture of Gelsemium, will be found very advantageous. The bowels should be kept regular, and the diet should be carefully regulated, being careful to use no fatty, acidulous, stimulating, or indigestible food.

Cramps in the limbs frequently occur during pregnancy, more especially in the latter weeks, and are at times quite violent. They take place suddenly, and can be relieved by friction of the affected part and change of position. In order to prevent their return the bowels should be kept regular by mild laxatives or injections, and the Compound Syrup of Partridgeberry be given internally. I have frequently found the following preparation useful in preventing cramps:—Take of High Cranberry bark one ounce, Skunk Cabbage root, Scullcap, each, half an ounce, Cardamom seeds, Capsicum, each, two drachms; digest these articles, bruised, in one quart of Malaga or other wine for three or four days. A tablespoonful may be given daily repeating it every two, three, or four hours. After the cramps have been removed, should any tenderness or soreness of the part remain, some stimulating liniment may be rubbed on.

LOCKED-JAW, OR TETANUS.

TETANUS is a disease or symptom of disease, which consists in a violent, extensive, and permanent contraction of all or only some of the muscles, without periods of relaxation, and attended with tension and rigidity of the parts affected,—the powers of sensation and intellect being uninjured. It is a very alarming affection. When the body is rigidly bent forward, it is termed “emprostotonos;” when the body is curved backward it is termed “opisthotonos,” and when to one side “pleurothotonos.” When limited to the muscles of the jaws, it is called “trismus or locked-jaw.”

SYMPTOMS. Sometimes tetanus comes on suddenly, and with great violence; but more generally it occurs gradually, differing greatly in various cases, both in the severity of its symptoms, and in the manner of attack. Usually, the first symptom is a slight sensation of stiffness in the back part of the neck, which increases, rendering any motion of the head both difficult and painful, with an uneasy sensation at the root of the tongue, and difficulty in swallowing. A great tightness about the chest, and a severe pain at the lower part of the breast-bone shooting into the back, is also present. The spasms of the neck become more violent, the jaws gradually become stiff with the teeth closely set together; spasms at the pit of the stomach and of the muscles of the abdomen take place, the abdomen feels very hard, the body is curved in some direction, or remains rigidly erect, with obstinate constipation and excruciating pain, and finally convulsions and death. Generally, in this disease, the eyes are rigid and immovable in their sockets, the countenance is hideously distorted and manifests great distress, the pulse becomes irregular, the strength exhausted, and there is frequently a cold, clammy perspiration. Death may also be produced from suffocation, or exhaustion. When it proves fatal it is generally from the fifth to the tenth day, and the younger the patient, the more rapidly fatal is it; sometimes one universal spasm terminates life.

CAUSES. The most common causes of tetanus are injuries, as punctures, wounds, lacerations, scratches, splinters, pieces of glass, or nails, &c., which have been forced into some part of the body, dislocations, fractures, &c. It may likewise be caused by irritating substances in the stomach and bowels, worms, exposure to cold and moisture, and is more common in warm than in temperate climates, and in marshy than in dry, elevated locations. Males of a sturdy and lusty constitution appear to be more subject to it, than females, or the weak of their own sex.

TREATMENT. Administer at once to the patient half a table-spoonful of the Compound Tincture of Lobelia and Capsicum, pouring it slowly in at the corner of the mouth, and repeating the dose every five minutes until such a degree of relaxation is produced as will enable the patient to swallow. At the same time, give an injection composed of half a fluidounce each, of water and the above Tincture, and repeat this every ten or twenty minutes. This will produce great relaxation and prostration with nausea and vomiting. Generally the first or second dose will cause a sufficient degree of relaxation to enable the patient to swallow; when a large dose of the Compound Powder of Jalap should be at once administered.

The part injured should be at once attended to, removing any foreign bodies that may be present, and if it be a wound that has healed, it should be opened immediately by the application of Caustic Potassa. Then to the injured part, and if possible, along the whole course of the pain, apply a poultice made of powdered Lobelia and Elm bark, equal parts, with sufficient weak, hot ley water. This poultice should be frequently renewed, as long as any pain or irritation continues.

The patient must be kept quiet for some days subsequently, and should an anodyne be required, Lupulin, Lactucarin, Cypripedin, or Extract of Hyoscyamus may be given.

When the tetanus continues for several days, in addition to the above means, it will be advisable to apply along the whole course of the spinal column, a fomentation of equal parts of Lobelia and Stramonium leaves, to which considerable Tincture of Camphor has been added, and this should be frequently renewed. Likewise give internally, a mixture of Tincture of Gelseminum one fluidounce, Sulphate of Quinia eight grains, Scutellarin one scruple. Shake these together, and give in doses, repeated sufficiently often to keep the patient under the relaxing influence of the Gelseminum.

The patient should be kept in a dark room, free from noise or excitement, he must not be disturbed by speaking, and his strength must be sustained by strong tea or broth of meats, administering them by injection if he cannot swallow. The injured part if it be an ulcer, or puncture, &c., must have a discharge kept up from it; and, in obstinate cases, means should be used to keep up a moderate degree of perspiration.

HYDROPHOBIA.

HYDROPHOBIA, Rabies, or Canine Madness, arises from the bite of a rabid animal, as a dog, cat, fox, &c. The term, Hydrophobia, meaning an aversion to water, does not properly designate the disease, as the spasms or convulsions are frequently induced by the sight of shining or polished bodies, mirrors, &c. All persons who may be bitten by a rabid animal, do not necessarily have hydrophobia, perhaps not more than one in ten, especially when the bite is through clothing which may wipe the poisonous saliva from the teeth.

SYMPTOMS. The first indication of the action of the virus is pain or uneasiness in the bitten part, which may have healed so as to leave scarcely a vestige of the injury, and never more than a scar. This first symptom may occur at an indefinite period, from a day even to two or three months. A burning or itching sensation is sometimes complained of, and occasionally red pimples have appeared immediately over the marks of the animal's teeth. In a short time, sharp, lancinating pains are felt in the bitten limb which gradually extend throughout the body, and are more particularly experienced in the region of the stomach, with dulness or dejection of spirits, heaviness of the head, restless nights, disturbed and frightful dreams, thirst, loss of appetite, and an indescribable expression of alarm and anxiety in the countenance. With these, and sometimes directly succeeding, the patient experiences a sense of coldness, with pale face, frequent yawnings and stretchings, twitchings of the muscles, acute pains in the bones and muscles, considerable tremors, and a disinclination to exercise. As the case progresses, the stomach becomes sour, with acute pain and burning in its region, thirst, perversion of taste, nausea, and vomiting of a glutinous, brown or greenish substance. The pulse is quick and irregular, the skin cold, but the temperature unequal, breathing is difficult, with a sense of stricture about the throat, causing pain and difficulty in swallowing fluids.

As the disease advances, the symptoms increase and new ones are added. Sleep is short and disturbed by frightful dreams, light is painful to the eyes, and the sight of liquids, or of any polished surface, or a flash of light, or the least noise, or a sensation of chilliness by being exposed to a draught of air, may excite an attack of the most horrible convulsions. It is impossible to

contemplate the situation of a patient at this stage without emotions of horror and regret. To all we have said is added an aspect ghastly and full of despair. The muscles of the face are distorted, the eyes fierce, "dismally wild, red, and inflamed," with the pupil much dilated, gaping of the mouth, lolling of the tongue, which is dry or rough, with a collection of froth about the mouth, attended by great heat, and thirst which cannot be allayed, for the very sight of water excites violent spasms and often madness, and in this frenzied moment endeavors are seemingly made to spit the frothy saliva upon the attendants. The spasms and convulsions recur constantly, and from stricture of the glottis a peculiar noise is heard somewhat resembling the barking of a dog. There is no tendency to bite, as is generally supposed, from the spasms of the muscles of the jaws causing a kind of chattering of the teeth. The scene closes with a weak and thready pulse, cold extremities, clammy sweats, deep sighing, vomiting, hiccough, difficult breathing, and finally a fatal and awful convulsion. Sometimes the disease proves fatal in twenty-four hours; at others not for several days.

CAUSES. The cause of rabies is unknown; in the human family it is the result of the bite of some rabid animal.

The moment a dog evinces any traces of illness it is no longer to be trusted; and it would be well to lock it up, or fasten it to a stout chain. But when it begins to gnaw wood, to show a dull eye, to snap at animals with which it had become familiarized, and to bark hoarsely; when it attempts to run away or to break its chain; eats and drinks with a snapping gesture; appears lively at intervals, and then again sneaks sulkily to its kennel; when it disregards its master's call, and contrary to its former habits, growls and snarls at well-known persons, the animal ought to be killed, for there can no longer remain a doubt of its being rabid. In rabies in the dog, as well as in the lower animals, there is no dread of water, as is generally supposed; on the contrary, the animal flies to it with eagerness, but is unable to swallow it, and all other rabid quadrupeds, with perhaps an occasional exception of the horse, are said to drink with ease and increased avidity.

TREATMENT. The most effectual way to prevent this disease, is to immediately cut out the bitten parts, carrying the knife into sufficient of the surrounding flesh, that none of the virus will come in contact with it; and the sooner this is done the better. If a few hours or days have elapsed after the bite, before the excision be effected, a discharge should be kept up from the cut surface by applying Caustic Potassa to it. When the wounded part is so situated that excision will be dangerous or difficult, a strong Caustic solution of Ammonia should be applied, and a discharge maintained.

When the symptoms of hydrophobia come on, many measures have been recommended, but they have generally been found unavailable. From a series of experiments instituted by myself several years since, I was led to firmly believe that the disease is owing entirely to the absorption of a poisonous acid into the system, and that a stimulating, diffusible alkaline preparation, might, by neutralizing this acid, overcome the disease. I, therefore, having the opportunity, used the treatment I am about to mention, on six persons, two in the commencement of the second stage, and four in the first, and with success. In these cases, the wounds had healed, and presented a scar of a dark purplish appearance. The persons were bitten by dogs known to be mad, and had the symptoms peculiar to the disease.

When the symptoms of hydrophobia begin to manifest themselves, or during any stage of the disease, the following is the course I invariably pursued: Take of the strongest Aqua Ammonia one teaspoonful, finely powdered Sculcap leaves one teaspoonful; put into a tin cup, to which

add half a gill of cold water, Then holding the patient's nose, to prevent the ammoniacal vapor from being inspired therein, cause him to make as full an exhalation as possible, and immediately drink the mixture well stirred together, while inspiring; if this cannot be done at once, the operation must be repeated until the whole is taken. If from spasms the patient is unable to swallow, then blindfold the eyes, and use all the persuasion that can be employed, to induce him to force it down. Perhaps a stomach tube might be employed, covering that part which comes in contact with the teeth with cork, or other soft wood; I have always succeeded without it. If the attack is severe, it may be necessary to fasten the legs and arms of the patient to prevent him from injuring others. Bandaging the eyes will be found to have a soothing effect, particularly if cotton or some soft substance is placed over them so that the patient can certainly see no light. It has been suggested to me, that when the patient is unable to swallow this alkaline preparation, in addition to blindfolding, the Compound Tincture of Lobelia and Capsicum be given in teaspoonful doses every few minutes, (by pouring it into the corners of his mouth,) until the Ammonia can be taken. Of this, I know nothing from experience, although it may prove useful.

Care must be taken to procure good Ammonia; the ordinary Ammonia of the shops will not do. That used by me was prepared by Dr. Chilton of New York city, put up in French glass-stoppered vials of two ounces each, and covered with bladder. I prefer this size, as in larger vials, the Ammonia loses considerable strength while using it from them. The Scullcap was used only on account of its reputed efficacy.

The dose above named, must be repeated every half-hour, and continued for two hours; and in the severe cases, I repeated it every fifteen minutes. In an hour and a half, or two hours after commencing its use, the more severe and distressing symptoms will generally disappear, the face and whole body will present a more or less fiery red appearance, and a heat nearly amounting to a sensation of burning will be experienced. The alkali has now diffused itself throughout the system; but as I view the matter, it must, at this crisis, be forced as it were, to pass even further, to the surface of the body. To accomplish this, and considering that a great affinity exists between an acid and an alkali, an acidulous vapor bath must be employed. For this purpose the following acetous vapor bath must have been prepared to use at the expiration of the two hours: Take of Stramonium leaves, Cicuta leaves, Hops, Scullcap, of each, half a pound, Vinegar four or five gallons; boil all together for ten or fifteen minutes. Likewise have several large stones well heated.

Half an hour after the last dose, undress the patient, place him on an open bottom chair, and envelop him with blankets, leaving however, an opportunity for him to inhale fresh atmospheric air now and then during the bath. Then place the above acetous decoction under him, and keep him there until he perspires freely and copiously. As the vapor lessens, the gradual addition of the hot stones will increase it again. Although I used the above herbs with the vinegar, I believe that vinegar alone will be sufficient.

After this vapor bath, which must always be carried to a powerful extent, the patient must be well dried, and another dose of the Ammonia and Scullcap given, repeating it every three hours for fourteen days in succession; at least I carried the treatment thus far.

On the first night of treatment, a full dose of the Compound Powder of Jalap must be given, which should be repeated every other night for

six nights, and then every third night. The acetous vapor bath must be repeated on the second, fourth, eighth, and twelfth days of treatment. Among my patients, this active course, especially during the first and second days, reduced their flesh most astonishingly. An infusion of Sculleap should be drank freely every day, and the diet must be light, but nutritious and easy of digestion, avoiding all acids, greasy or fat food, milk and liquors. The following is reputed successful, and may be used instead of the Sculleap: Take four or five ounces of Red Chickweed, boil it in two quarts of Ale, or Hop Beer, until it is evaporated to one-half; press out and strain the liquid, and add to it two fluidrachms of Laudanum. The dose is half a gill every morning, or oftener if the symptoms are manifest; and in severe cases, the whole may be taken in one day.

From the commencement of the treatment, the part must be kept constantly discharging by the application of Sesquicarbonate of Potassa, and Elm poultices.

In case the person is very much convulsed in the first part of the treatment, the best course will be to apply the acetous vapor bath immediately, and administer the Ammonia as soon as it can be swallowed; in other respects pursue the same course as above.

MANIA, OR INSANITY.

BY INSANITY or Mania, is meant a derangement of the intellect, with erroneous judgment, or hallucinations, producing various influences upon the actions of the patient, according to the peculiarity of the insanity. Authors have variously arranged the several forms of mental derangement into Insanity, Mania, Monomania, Dementia, Idiocy, &c., but as I cannot, consistently with the plan of this work, enter into a description of their hypotheses, classifications, and definitions concerning these several varieties, I shall merely confine myself to some of the more ordinary symptoms of insanity, as usually understood by the extra-professional reader, referring those who desire more minute information on the subject to the several valuable works which have gone into a more extensive investigation of it.

SYMPTOMS. The symptoms of insanity are so various and diversified, that it would be impossible to give any perfect description of them; a statement of some of the most distinguishable symptoms is all that can be expected in a work like the present.

The most common form of insanity is termed intermitting, in consequence of its occurring in paroxysms, the patient being sane in the intervals; it may come on at any period of life, but more commonly between the ages of twenty-five and forty-five. Sometimes it is permanent, continuing steadily without lucid intervals, until a cure is effected, or until the patient dies. Insanity may come on gradually, or it may attack suddenly, the latter is most commonly the case; the former being principally met with among those with whom the malady is hereditary, and in whom some eccentricities or peculiarities may be observed for some time before insanity is suspected by the friends of the patient. Two kinds of insanity have been described by writers, the melancholic and the furious; and these have been again subdivided into several varieties, which subdivisions, however, I shall not enter into.

There are no two patients in whom the symptoms exhibit precisely the same appearances, for the cause of the attack, together with the habits and propensities of each patient, develop ideas, expressions, and actions

peculiar only to his individual case. Very frequently, whatever may be the form of the insanity, it is preceded by certain symptoms, as a want of appetite, constipation, a sense of tightness at the region of the stomach, and of heat in the bowels; an indescribable uneasiness is experienced, sometimes amounting to fear or actual terror, and there is more or less wakefulness. As the malady progresses, it manifests itself more plainly by extraordinary actions, more or less absurd conversation and ideas, and peculiar expressions and movements of the features. If the insanity be of the melancholy form, it will be accompanied with sadness, dejection of spirits, love of solitude, indisposition to exercise, and unwillingness to talk,—or the patient may walk in a great hurry, exhibiting strange gestures, and betray much inconsistency and absurdity of ideas in his remarks. Some express their misfortune by tears, others are remarkably good-humored, as manifested by paroxysms of loud and excessive laughter; one holds his head upward to the heavens, another looks toward the ground as if in profound meditation; while others will be met with, who maintain a perpetual silence. This class of patients are usually timid, prone to anger, very changeable in their temper, with pale countenance, slow, and sometimes weak and small pulse, flatulent bowels, great watchfulness and constipation. They are very apt to commit suicide.

On the other hand, the furious form of insanity is attended with violent headache, flushed face, unpleasant sounds in the ears, violent and furious conduct, grinding of the teeth, staring and rolling of the eyes, great muscular exertions, attempts to injure persons who are near them, absurd, inconsistent, or obscene remarks, a display of maliciousness toward certain individuals, more especially friends and relations, an aversion to former habitations and sights, and the sensation so much impaired as to enable them to resist the effects of cold, hunger, and want of sleep, and endure an excessive degree of cold. Their muscular strength is astonishingly increased, so as to require several men to restrain them from committing violence.

When a person is irrational on only one particular subject, being sane on all others, it is termed *monomania*. When the perceptive powers, the memory, the faculty of forming ideas, &c., are all impaired or lost, with loss of judgment and reasoning powers, it is termed *dementia*, in which there is generally considerable variation in the temper, being at one time very kind and amiable, and at the next moment very violent, malicious, and quarrelsome. Dementia is commonly incurable, and is apt to follow other disorders of the mind or brain, delirium tremens, apoplexy, neuralgia, epilepsy, &c.

CAUSES. The cause of insanity is not understood; all that we know is, that when the brain is subjected to the influence of certain emotions, or sensations, the principle which gives the capability of framing compatible, harmonious, and rational ideas and actions, becomes more or less permanently deranged; what part of the brain or nervous system is principally interested, is still a problem. But as there is a very intimate association between the mind and body, it is highly probable that the deranged intellect is always more or less complicated with some unhealthy condition of the brain or other organs.

The exciting causes of insanity are various; injuries may give rise to it, as blows upon the head, blows upon the spinal column, &c.; it may also originate from intemperance, suppressed discharges or eruptions, the use of mercury, the occurrence of febrile or inflammatory diseases, apoplexy, paralysis, chorea, violent mental emotions, as grief, love, jealousy, anger, joy, disappointment, misfortune, religious excitement, and profound study.

Profuse evacuations by cathartics, diaphoretics, bleedings, &c., may occasion it. Sexual excesses are a frequent cause, and a very prevalent practice among young men and women, masturbation, is another cause, too little suspected. Dyspepsia, derangements of the liver, or of other organs are not unfrequently connected with insanity. In many cases the tendency to insanity appears to be inherited from one or both of the parents, and persons should be exceedingly careful how they intermarry with those who are the descendants or offspring of insane or very eccentric individuals. "When, as it sometimes happens, an hereditary disposition or bias to this disease appears to sleep through one generation, it will often be found to awaken in the next with even aggravated horrors. Should the child of a maniac escape his parent's malady, the chance is small that the grandchild will be equally fortunate." Marrying with blood relations, as first or second cousins, &c., disposes the offspring to idiocy or insanity.

PROGNOSIS. When insanity is a consequence of some other disorder, attacking slightly, and with long intervals between the paroxysm, a radical cure may be effected; the same may be said of those cases which are recent, occurring in young persons, with lengthy lucid intervals. The unfavorable cases are, when it occurs among aged persons, when it is hereditary, when it follows apoplexy, epilepsy, or palsy, when it is permanent without any lucid intervals, and when the mind has been disorganized by intoxication, debauchery, or the corroding operation of any chronic passion, as love, jealousy, &c. Furious insanity is oftener recovered from than the melancholic kind.

TREATMENT. As a general rule, insane patients should never be treated at home, but should at once be removed to one of those institutions especially prepared for them, and in which all the necessary arrangements are in readiness, as proper rooms, experienced physicians, nurses, &c. Recoveries are found to occur much oftener in well-regulated institutions of this kind, than in the homes of the patients.

The first and most important thing to be done in the treatment of insane persons is to gain their confidence and consequent respect and obedience, and this can only be effected by kindness toward them, and a strict regard for truth in everything relating to them. That method which authorizes acts of deception, indignity, and cruelty is improper, and should not be pursued under any consideration whatever. A harsh, tyrannical course of conduct toward lunatics is reprehensible, and serves to retard their recovery. And even in those cases where coercion becomes absolutely necessary, harshness and severity are unnecessary; but inflexibility of character, with firmness, veracity, and kindness should be invariably observed, and will be found much more effective. It is always better never to contradict an insane patient, however absurd his opinions or assertions may be; but when they are recovering, their incoherencies may be opposed by reasoning, contradiction, and even ridicule.

The following tale will convey a faint idea of the mode of governing a lunatic under certain circumstances: It is stated that one of the attending physicians of the New York Hospital having gone up to the cupola of that building, was, unknown to him, followed by an insane man, who, upon reaching the top of the building, seized the physician by the arm roughly, saying, "Now let's immortalize ourselves by jumping off," and endeavored to force him into the measure. The physician, however, looking calmly and undismayed at the lunatic, answered, "My friend, I'll tell you a better method than that for immortalizing ourselves." "What is that?" responded the unfortunate. "Let us both go down to the ground, and jump up here, for that

is a feat nobody has ever yet performed." "Agreed," said the patient; and the physician taking his arm, immediately hastened down with him, and had him secured. In this case the least indecision, the least opposition might have cost the physician his life.

When coercion is actually necessary, it being requisite to protect bystanders as well as the patient himself from injury, the straight-jacket is the safest and best resource, being much preferable to the painful and even injurious plan of permitting the patient to struggle with his keepers. Although a recourse to the straight-jacket may be very repugnant to the views and feelings of friends and relatives, it is the most merciful and kindest course that can be pursued, as it occasions no pain, and is very apt to calm the patient as soon as he finds that his struggles are useless. In some instances the application of the cold douche to the head and spinal column of the patient when he exhibits a spirit of unruliness, conjoined with kind and pleasant measures when he is obedient, has effected the most happy results. Sometimes a mere reference to the straight-jacket, or the cold douche, in the hearing of the patient, has at once quieted the most furious lunatic.

Insane persons should be kept constantly occupied when their condition will permit; reading, writing, gardening, mechanical operations, walking or riding out, music, sewing, knitting, drawing, &c., and in selecting the kind of employment the patient should be indulged in that which he prefers, if it is not calculated to produce any allusions to the cause of the disease. The most agreeable exercise, calling into play the greatest bodily action, with the least fatigue, will generally be found the best. Lunatics should not be too soon removed to their homes by friends or relations, because they frequently display much cunning, deceiving the inexperienced by conducting themselves with great propriety, but becoming furious and ungovernable upon reaching their homes.

The diet of maniacs should be light, nourishing, and easy of digestion, and in proportion to their strength, and the amount of exercise they take; in cold weather care should be taken that their rooms are warm, for if exposed to a great degree of cold, ulceration and mortification of portions of the limbs may take place. Great care should be taken that all instruments which may be dangerously used are kept out of their way, and their windows and doors should be properly secured, that they cannot escape or injure themselves. They should be kept apart from each other as much as possible, lest one contract an additional degree of insanity from another; this, however, may not be necessary in the milder cases. The above may be said to comprise the general principles of treatment for the insane, without entering into details, for which the reader is referred to works especially devoted to this subject. Confirmed maniacs need no medical measures further than to obviate costiveness, and occasionally administer a warm bath.

An English author makes the following remarks in relation to this matter: "In the management of the insane, the great objects to be aimed at are, in the first place, that the invalids be separately and properly classed, both in respect to their ages, sexes, condition in life, and kind or degree of their disorder. Those who are violent, noisy, and dirty, should not be placed in the same room with those who are quiet and orderly, or in a state of convalescence. Secondly, free ventilation, so insured as to guard against undue exposure to the inclemencies of the weather. Thirdly, a rigid system of cleanliness. Fourthly, such a judicious regulation both of mental and bodily exercise as shall excite without fatigue, and exhilarate without exhaustion; and lastly, a combination of tenderness, lenity, and conciliation, with proper firmness, at the same time, on the part of the keepers.

"It should always be the object of the superintendent to gain the confidence of the patient, and to awake in him proper respect and obedience, which is to be effected by discipline of temper and dignity of manners. Tyrannical severity may excite fear in the lunatic, but it will be mingled probably with contempt. In the management of insane persons the superintendent must endeavor to obtain a moral ascendancy over them. When this is once effected, he will be enabled on all future occasions to direct and regulate their conduct according as his judgment may suggest.

"Prudent management will generally restrain fury, and sometimes restore rationality very speedily. The patient must always be treated with lenity and kindness, and with the manners due to his station in life; for it is obvious that a system of rigid order and discipline, combined with lenity and conciliation, is the only rational and successful method of combating the extravagances of lunatics.

"To obtain a salutary influence over the wanderings of a maniac, we ought first to secure his confidence. This cannot be done without behaving toward him with a delicacy due to his unfortunate state, which, for the most part, ought to be regarded, not as an abolition, but as a suppression merely of the rational faculties. There is, indeed, ground to apprehend that fugitive folly has been too often converted into a fixed and settled frenzy; a transient guest into an irremovable tenant of the mind; an occasional aberration of intellect into a confirmed and inveterate habit of dereliction, by a premature and too precipitate adoption of measures and methods of management, which are only necessary in cases of extreme desperation. Experience has now abundantly proved that the best effects have resulted from a system, the prevailing feature of which is kindness, combined with certain degrees of indulgence.

* * * * *

Insane persons should be made to rise early, to take such exercise as their condition will admit of, and have their food served up to them at stated times. Independently of such regularity contributing to health, it also renders them more manageable. In all cases of madness it will be proper to remove the patient from those objects with which he was formerly acquainted, as these might call up ideas and the various associations; and on this account a change of situation and removal from his friends will be advisable; for it is a fact well known to those who superintend lunatics, that patients seldom, if ever, recover at home. It not unfrequently happens, indeed, that maniacs who have been brought immediately from their families, and who are said to be in a violent and ferocious state at home, become suddenly calm and tractable when placed in a lunatic asylum. On the other hand, it is equally a fact, that there are many patients whose disorder speedily recurs after having been suffered to return to their families, although they have for a length of time conducted themselves, under confinement, in a very orderly manner. The restraint, cunning, and dissimulation, which many insane persons are capable of, are well known to those who are much with them; but the ignorant are apt to cry out against excluding them from society, because they probably happen to conduct themselves with propriety before strangers, and in short conversations appear coherent and rational."

As regards medicinal means, the bowels should be kept regular, with occasional cathartics, for which purpose the Compound Powder or Pills of Lep-tandrin may be used, bearing in mind that the action of medicine is frequently so strongly resisted by the system, that larger doses than usual will be required, and even these will have to be perseveringly used for a considerable length of time; the skin should be kept in a healthy condition by frequent bathings. When there is much determination to the head the cold

douche, with Mustard to the feet and between the shoulders, may be advantageously used, and in severe cases the Compound Tar plaster may be placed over the nape of the neck, and kept discharging for some time. For wakefulness, Extract of Hyoscyamus, Lactucarin, or Opium, may be administered in appropriate doses. And infusions of Valerian, Scullcap, Skunk Cabbage, &c., may be used as substitutes for Tea and Coffee; in those of anemic habits some preparation of iron must be used. And in all cases, when it can be done, it will be better to medicate the food and drink of the patient, rather than to administer medicines as such. When the condition of the patient will permit, vegetable tonics should be administered. Perhaps the relaxing influence of Gelsemium might be found useful in some of the furious forms of insanity. When insanity occurs in consequence of great debility and exhaustion, as sometimes happens at the close of typhus fever, great care should be taken to avoid further debility by evacuating agents; a nutritive and restorative course should be pursued, with vegetable tonic bitters and preparations of iron. Insanity from masturbation, is, generally, of very difficult cure, though it should be attempted by a strengthening course, and means to prevent the patient from continuing the vice.

MELANCHOLY, or Melancholia, is a variety of insanity, in which the patient is fearful and low-spirited, shunning society, and courting solitude. The face is pale, the urine scant and pale, and the bowels costive and flatulent. The patient is peevish, whimsical, and curious, constantly brooding over some misfortune, considering all mankind as enemies, and themselves as guilty of some great crime against Heaven or man; tears, deep sighs, painful breathings, and constant indolence are common, and one very usual propensity is, to commit suicide. The appetite is variable, and food is frequently refused from a wish to die, the pulse is very feeble, the voice low, and very expressive of mental despondency, sleep imperfect, and often a very fetid breath.

This form of insanity may be caused by disappointment in love or other matters, gloomy and extravagant ideas concerning religion and a future state, belief in spiritual rappings, immoderate venery, masturbation, suppression of habitual evacuations, intoxication, injuries of the head, &c.

The treatment must be mental as well as physical. The patient should be made to exercise, to associate and converse with cheerful friends, to visit places of amusement, to travel if possible, and to have his mind constantly occupied with some agreeable employment, being never left alone, and never opposed or contradicted directly, although he may be reasoned with, or have some of his ideas presented in a manner to appear ridiculous even to himself. His bowels should be kept regular, his body frequently bathed, with friction in drying, and in some cases the cold shower-bath will prove beneficial; tonics should be given daily, as the Compound Wine of Comfrey, for instance, and his diet should be light, but nutritious and easy of digestion, avoiding fats and acids. His hours of sleep should be regulated, his bed should not be too soft, he should not be allowed to sleep alone, and he should be made to exercise daily in the open air, either walking, riding, sailing, fishing, playing ball, billiards, &c.

DELIRIUM TREMENS.

DELIRIUM TREMENS is a disease to which persons addicted to the intemperate use of intoxicating drinks are very subject. It is a dangerous disease, frequently destroying the patient, or causing a state of dementia.

SYMPTOMS. Delirium tremens most usually commences with some degree of nausea, vomiting, and loss of appetite, especially for breakfast, which are soon followed by constant wakefulness, incessant talking, walking about restlessly, and sometimes raving from the first. There is a constant trembling and unsteadiness of the limbs, the hand is unsteady, the tongue is tremulous when protruded, the gait is staggering, the skin is cool, and the pulse weak and rapid. As the disease progresses the symptoms become worse, the patient is not silent for a moment, he is constantly talking, scolding, or laughing; changing from one thing to another rapidly, arranging his clothes, room, bed, &c., with more or less agitation and mental suffering. He conceives the presence of things which he is aware are illusions, or they may appear so real as for a time to make him actually believe that they truly exist; but most generally this deranged perception may be explained away for the moment by some kind friend. Among these imaginary objects are rats, mice, serpents, fiends, witches, guns, dragons, bugs, insects, &c., &c., to free himself from which he will have the most fearful struggles, with expressions of disgust, distress, and even fear and horror. It is impossible to name the various fancies which he creates, at one time laughing, at another, begging with tears in his eyes for life, then humbly asking pardon for some imaginary wrong, again, pointing with various expressions to the objects conjured up in his disordered mind, and finally, raving almost like a maniac. His eyes are bloodshot, and in constant motion, with a peculiar glare, glancing fearfully and suspiciously at every object around him; the countenance is usually pale, haggard, and distressed, the tongue coated with a thick, yellowish mucus, the head hot, and the bowels costive, with, occasionally, nausea and vomiting. If the patient be not relieved, he becomes worn out, is compelled to lie down from sheer debility, and may die suddenly in an apoplectic or epileptic condition, or, he may gradually sink, the surface becoming cold, with clammy sweats, low, muttering delirium, stupor, picking at the bedclothes, twitching of the tendons, and death. I have witnessed cases in which the first symptom was an epileptic convulsion, or apoplexy, on a recovery from which, well-marked delirium tremens occurred.

CAUSES. The exciting cause of this disease is more commonly a sudden abstinence from intoxicating drinks among those who have been habituated to their use, whereby the functions of the brain become excessively weakened and impaired. It likewise frequently happens while the person is in his career of dissipation; and, occasionally, it occurs after a long-continued but moderate use of alcoholic drinks. It usually comes on in from one to five days after the discontinuance of the inordinate alcoholic excitement.

TREATMENT. In the treatment of a patient with delirium tremens, opposition and the use of force should be avoided as much as possible, because they give rise to irritation and increase the difficulty. Gentle and persuasive means are the best, with a degree of firmness; and at no time must the practitioner yield to the fancies of the patient, but rather reason or laugh him out of them, and this course will accomplish much more in gaining control and confidence, than an opposite one. Many writers have objected to the use of stimulants in this affection, but upon what grounds I must confess myself at a loss to determine: and I have witnessed more deaths in the non-stimulating course, than in the opposite. I have treated some hundreds of cases of delirium tremens, and invariably with success by the medication about to be described. Take of Sulphate of Quinia eight grains, Sulphate of Morphia one grain; mix, and divide into four powders. One of these powders should be given every hour, and in some cases I have given them every half-hour for the first two or three doses. When the use of these

powders has to be continued for some time, the intervals must be lengthened, that too much morphia be not thrown into the patient's system; in most cases, sleep will follow the second dose. Shortly after the first dose, give the patient a table-spoonful of good brandy, made into a sling with water and sugar, as a reward if he will lie quietly in bed and try to sleep. He will promise this, but will soon forget his promise, when he must be reminded of it, and thus kept in bed as long as possible, until he no longer cares for keeping his word, when another dose of the brandy may be given, as a still further stimulus to induce him to lie still, and this course must be pursued until he falls asleep, when he should not be disturbed. The room must be kept perfectly quiet not only while the patient is awake, but especially during his sleep, and it should also be kept darkened, so as to favor sleep as much as possible. The great object is to procure sleep, after which the danger is over. He may sleep for six, eight, or ten hours, and will generally awake with his mind recovered, and desiring some nourishment. Some light, nutritious diet may now be given him, and in an hour or two afterward, a mild cathartic should be administered, as Rhubarb and Magnesia, Podophyllin and Leptandrin, &c. And should symptoms of any disease be manifested, these must be treated according to their indications.

It has been recommended by some authors to apply cold water to the head, and Mustard to the feet, but I have never found any benefit from them, and, in most cases, an attempt to use them will arouse a spirit of decided opposition on the part of the patient, tending to increase his disease.

The treatment after the action of the cathartic, for the purpose of strengthening the stomach and system, should consist of infusions of bitter tonics as Quassia, Gentian, Golden Seal, Hops, Colombo, &c., especially the Quassia; should the patient be anemic, some preparation of iron will prove advantageous as an additional measure.

HYPOCHONDRIA.

HYPOCHONDRIA is a species of mental alienation, owing to debility of the brain and nervous system, which is observed in some persons who, although of sound judgment in other respects, reason erroneously on matters concerning their own health. The disease is known by several other names, as, *low spirits, the vapors, spleeny, hypo, &c.*

SYMPTOMS. There is an inactivity, an irresolution in attempting any project, the spirits are low and dejected, with more or less despondency, and an infinite diversity of gloomy ideas. The patient imagines that he is laboring under one or more diseases; he looks upon the most trifling symptom as of the greatest importance; he fancies that some living animal is within him; he fears that he will become very poor and needy; imagines that he has not a friend living; or, that he must soon die. Every little pain or unpleasant feeling is exaggerated; there is a constant apprehension of evil, or some anticipated dangers; a whimsical repugnance to certain persons, locations, &c.;—the disposition is fretful and wayward, with peevishness and great fickleness; quarreling with friends; discontented with almost everything; often tempted to commit suicide; and a host of strange, fanciful, and absurd notions too numerous to mention. Each patient has his peculiar state of feeling and ideas, seldom any two being exactly alike; and they are usually highly offended when any person attempts to prove to them the inconsistency or groundlessness of their fancies. The appetite is impaired, irregular, or entirely lost, the bowels are constipated, flatulency, and eructations of an

acid fluid are common; the urine is usually copious and pale, there is swimming of the head, impaired vision, spasmodic pains in one or more parts of the system, palpitation of the heart, wakefulness, indifference to surrounding circumstances, and a feeling of indolence rendering the person unfit for any mental or physical exertion.

Hypochondriacal and nervous people, and those who read and write much without proper physical exercise, are apt to be troubled with what are termed *muscæ volitantes*, (little black specks floating before the eyes, or remaining in one position,) these, though harmless, often excite alarm and apprehension on the part of such persons, who mistake them for cataract or amaurosis. But whenever the appearance of these specks is unaccompanied with the sensation of a mist which more or less obscures the appearance of objects, we may safely conclude that it is not a symptom of cataract; and whenever this appearance is not accompanied with a fixed state of the pupil, it may be safely inferred that it is not a symptom of amaurosis.

CAUSES. Hypochondria may be caused by any circumstance that will lessen the tone and energy of the nervous system, as close and severe study, especially when protracted to late hours of the night, great mental anxiety, an inactive, indolent, or sedentary life, intemperate habits, excesses in eating and drinking, immoderate venery, masturbation, active cathartics, long-continued evacuations, the immoderate use of mercury, the suppression of customary discharges or of an eruptive disease of long standing, crude, flatulent, or unwholesome food, &c. It is often connected with dyspepsia, liver-complaint, and especially affections of the spleen. It appears to be produced, also, by sympathy, as it frequently happens that persons of a cheerful temper become decidedly dejected and despondent from long-continued and constant association with those of a hypochondriacal disposition.

TREATMENT. Hypochondriacs should be treated more by hygienical and moral measures than medical; and although we should not treat their imaginary complaints as realities, yet their lamentations should be attended to as though they were based upon a genuine malady. We should not attempt to exasperate an excitable mind by treating its imaginary difficulties with too much lightness, nor subject an abnormally sensitive person to censure and insolence. "Compassion and not raillery is to be bestowed on the hypochondriac, as the firm persuasion which he entertains will not allow his feelings to be treated as imaginary, nor his apprehension of danger to be considered as groundless, however the physician may be of opinion that it is the case in both respects." The patient should be compelled to take exercise daily and regularly in company with some cheerful associates; amusements, as gunning, fishing, riding, billiard playing, traveling, &c., are very important; the mind must be kept constantly occupied, not allowing time for it to dwell upon self. Good, cheerful, lively company is always desirable. The patient should go to bed early, sleep upon a hard bed, rise early, and exercise in the open morning air, whenever the weather is proper. Bathing with cold water, or the cold shower-bath, will be found useful, especially when followed by brisk frictions. The diet should be light, nutritious, and generous, avoiding fats, acids, flatulent food, liquors, tea and coffee; the food should be well masticated, and the stomach should never be overloaded, neither should it be suffered to remain perfectly empty. The clothing should be comfortably warm, but not too much so.

As to medicines, unless there is actual disease, but little will be required; if the bowels are costive they may be kept regular daily by a mixture of Rhubarb two parts, and Bicarbonate of Potassa one part, of which from three to fifteen grains may be given for a dose, according to its action;

in very obstinate cases, the twelfth of a grain of the Alcoholic Extract of *Nux Vomica* may be added to each dose. Or, the following pills may be administered:—Take of *Leptandrin* three drachms, *Podophyllin*, *Apocynin*, each, one drachm, Alcoholic Extract of *Nux Vomica* twelve grains, Castile Soap, a sufficient quantity to make a pill-mass; mix together, and divide into pills of three grains each, of which one may be given every night. Too active purgation must be avoided. These mild laxatives correct the morbid condition of the stomach and intestines, cleanse them of accumulations, and impart new action and tone to them, and through them to the nervous system.

In addition to this, some tonic may be given, as the Compound Powder of *Xanthoxylin*, the Compound Powder of Golden Seal, the Compound Pills of *Quinia*, &c., which should be ordered to be taken at positive and regular periods of the day. “The times for taking the different draughts, or doses, are so many epochs in the chronology of a hypochondriac, which, by dividing, help to conquer the tedium of his day. However sceptical a physician may be with regard to the inherent or permanent qualities of any medicine, it is his duty, perhaps, to take advantage of the tide of opinion; and he may honestly make use of his patient’s credulity, in order to relieve him from the pressure of his disease, and render the partial weakness of his mind instrumental to the general restoration of his corporeal strength.”

When obstinate hypochondria occurs in young lads and girls, it is much to be feared that it is due to the horrible vice of masturbation, and there can be no hope of recovery unless the habits which have induced the malady be at once and entirely abandoned. When other diseases accompany hypochondria, they must be treated as directed under their appropriate heads; and for flatulency, which is a very common attendant, treat it as named under *Dyspepsia*.

For spasmodic pains in the head and stomach, *Cypripedin*, *Scutellarin*, *Ether*, *Caulophyllin*, *Aletridin*, &c., may be given either alone, or in various combinations; the following will be found very efficacious:—Take of *Ether*, *Spirits of Nitre Dulce*, each, eight fluidounces, *Oil of Cinnamon*, *Oil of Anise*, each, half a fluidounce, *Cypripedin* one and a half drachms; mix together; the dose is from twenty to sixty drops in some sweetened water, every three or four hours. This is very useful in hysteria, hypochondria, and other diseases of nervous debility. When the patient loses confidence in one preparation, we can readily substitute another, hypochondriacs being seldom satisfied unless they are liberally supplied with medicine in some form or other. Anemic hypochondriacs must take some preparation of *Iron*.

MASTURBATION.

MASTURBATION, Onanism, or Self-pollution, is the production of the venereal orgasm by artificial means. Unfortunately, it is a vice by no means uncommon among the youth of both sexes, and is frequently continued even into riper years. In the course of the last twenty years, I have treated no less than twenty-five hundred patients whose ailments were brought on by this horrid habit, and among these about one-third were females. Although at the commencement there may be no abnormal disposition of the system, yet eventually, if the practice be continued, it produces such a state of derangement in the brain and nervous system of its victim, as to prove a disease in itself very difficult to remove; and the more the vice is indulged

in, like drunkenness, the greater will be the desire to continue it. A host of symptoms are produced by it, which the physician, as well as the patient's friends frequently disregard, or do not even mistrust.

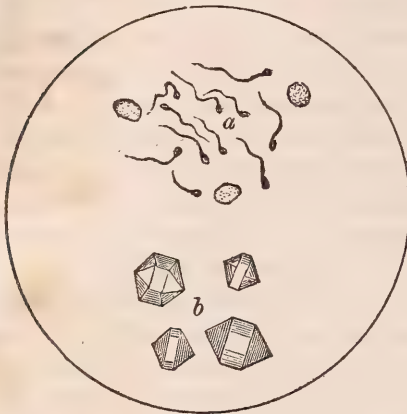
SYMPTOMS. The symptoms which are produced by this vice, are so many and multifarious, that it would be almost a Herculean task to enumerate them, and all that can be done in a work like the present, will be to merely refer to the more common ones. When the habit commences in early life, it usually retards the growth, impairs the mental faculties, and brings on premature old age, with debasement of the human soul, and the mind filled with obscenity and beastliness. One very common symptom, more especially among young females, is a disposition to solitude, to seclude themselves from society; and this is by no means unfrequent among males. Headache, wakefulness, and uneasy nights, pains in various parts of the body, indolence, inaptitude to study, forgetfulness, hypochondria, melancholy, hysteria, great mental despondency, fluor albus, weakness in the back and in the reproductive organs, variable appetite, and a lack of confidence in their own abilities, are very usual symptoms. Cowardice is a striking peculiarity,—an onanist cannot look a person full in the face, for they fancy their sin is known, or at least suspected. When the evil has been pursued for several years, or has been carried to a great extent, there will be an irritable, feverish condition of the system, with sudden flashes of heat over the face; the eyes have a sheepish, undecided look; the countenance becomes pale; gloomy, distrustful in its expression; dark spots under the eyes are common, especially among females; the pulse is variable; the hair becomes dry and splits at its ends in nearly all long-continued cases; general debility and emaciation occurs, with shortness of breath and palpitation of the heart on the slightest exercise; sometimes there is a pain extending from the region of the heart into the left shoulder and arm; constant pain in the head, especially in the back part, with a preternatural heat of that part; the eyes become weak; there is more or less extensive spinal irritation; a sensation as of ants crawling along the back, or on the thighs; eruptions break out on the skin; and the genital organ of the male gradually dwindles away in size, loses its muscular power, requiring extraordinary efforts to excite it. Symptoms of dyspepsia, with cough, irritation of the throat, pains in the chest, and also in the loins, costiveness, unrefreshing sleep, disturbed dreams, and a desire to lie long in bed in the morning, are likewise frequently met with. Several of the above symptoms, with many more, will usually be found in individual cases; rarely will they all be found together.

The children of parents whose nervous systems have been impaired by masturbation, are never robust and vigorous; they are subject to convulsions in infancy, to epilepsy, to scrofula, their mental qualifications are never extraordinary, and they are rather apt to be diminutive in stature.

The consequences of masturbation are, premature old age, mental imbecility, hypochondria, consumption, epilepsy, mania, apoplexy, paralysis, &c. Among females, in addition, fluor albus, menstrual derangement, hysteria, catalepsy, furor uterinus, various strange and often unaccountable nervous symptoms; among males, the most common and serious result is spermatorrhea, or an involuntary discharge of the seminal fluid immediately after urinating or stooling, but more commonly during sleep. Though this condition may be brought on by other causes, as worms in the rectum, piles, fistula, irritation or chronic inflammation of the prostate gland, or of the urethra, and sexual excesses. Spermatorrhea is most injurious to the patient's health; it causes him to become thin, pale, and feeble, impairs his

vision, gives him a languid, sickly look, with a disinclination to active bodily

Fig. 24.



a. Seminal animalcules or spermatozoa, and seminal granules.

b. Dodecahedral crystals of Oxalate of Lime.

or mental labor, together with symptoms simulating various affections of the brain, throat, lungs, liver, stomach, &c. By careful observation with the microscope, of the urine of a masturbator, the seminal animalcules, or spermatozoa, can always be found in greater or less abundance. (See Fig. 24.) They are more or less oval in form, and are furnished with long and delicate tails. In their native fluid, the semen, they move about actively, but in urine, unless a considerable quantity of pus is also present, they are never found alive. In seminal urine may also be detected a few minute granular corpuscles of a round or oval form, and rather larger than the bodies of the spermatozoa, called *spermatic granules*. Traces of albumen may also be generally detected in seminal urine,

by the application of heat and Nitric Acid; and large octohedrons of Oxalate of Lime, are of common occurrence.

To show the evils arising from the habit of masturbation, I would remark that I have frequently had married men of middle age, who had been guilty of this practice in their early manhood, apply to me in order to obtain relief from the difficulties and debility to which they were subjected, as a result of the early habit. Some of whom confessed to me that they would have committed suicide had they not obtained relief from my treatment. And death by suicide, is by no means an uncommon termination of the masturbator. Unfortunately, this vice is too generally commenced at an early period in life, when its dangers and awful results are not known, or cannot be thoroughly realized, and the victim discovers his fault only when some permanent or very obstinate injury has been inflicted thereby upon his system. It is a very common practice in female boarding-schools and theological seminaries.

TREATMENT. In the treatment of the effects of masturbation, much will depend upon their character, for they frequently vary so much, that what would be applicable to one patient, would not to another. In a work limited as the present, it will be impossible to enter into a minute description of the various symptoms which may be met with, and their especial treatment; all that I can do, will be to lay before the reader the general principles which must govern him in attempting to effect cures. In a future work, devoted entirely to the treatment of chronic diseases, I will enter into a more detailed account of their nature and treatment.

The first and most important measure in the treatment is, that the patient at once abandon the pernicious habit, for without this is done, all treatment will be useless and ineffectual. This will frequently be found a very difficult task for the patient to accomplish, for from the mental and moral debility already effected, he will relapse into the habit unconsciously; and it will require, in many cases, much firmness, patience, and perseverance on the part of the physician, before he will be able to permanently remove this vexatious obstacle. But he must not become discouraged, nor leave his patient to suffer the horrible consequences of this unnatural practice, without making the most powerful and oft-repeated endeavors to persuade, convince, encourage, and strengthen his reason and resolution. To

further this object, every means should be used to improve his moral feelings, and to restrain his imagination; every thing of a lascivious character must positively be avoided; the society of virtuous and intellectual females is always proper, notwithstanding this is prohibited by some authors; his mind should be directed to some useful occupation or amusement, but without causing fatigue; he must not be left alone more than is unavoidable; and should never be permitted to sleep alone. The constant superintendence of a friend is necessary, especially in the worst cases. The cure will proceed more rapidly when these means can be pursued, but, where they cannot, as is frequently the case, we must manage the case as cautiously as possible.

In recent cases where no great amount of debility has been produced, the patient will recover under a stimulating and tonic treatment, as, take of Red Peruvian bark two ounces, Chamomile flowers one ounce, good Port Wine one quart. Mix together, let it stand a few days, frequently shaking, when it will be fit for use. A wineglassful may be taken three or four times a day. If there should be nervous exhaustion with sadness, depression, no disposition to exertion, &c., the following may be also used: Take of Chloroform, Tincture of Ginger, of each, half a fluidounce, Aromatic Spirit of Ammonia two fluidrachms; mix. The dose is twenty-five drops in a wineglass of milk, to be repeated three times a day.

When there is debility with a sense of lassitude or indolence, one of the following preparations may be given:—1. Take of Acetate of Strychnia one grain, Acetous Acid twenty minims, Alcohol two fluidrachms, distilled water six fluidrachms; mix. The dose is ten drops three times a day; each dose containing one-fiftieth of a grain of Strychnia. 2. Take of Sulphate of Quinia, Alcoholic Extract of Nux Vomica, each, twelve grains, Extract of Hyoscyamus twenty-four grains; mix, and divide into twenty-four pills, of which one may be given every three or four hours. 3. In long standing cases, with more or less anemia, and virile weakness, take of Phosphate of Quinia, Metabasic Phosphate of Iron, each, twenty-four grains, Alcoholic Extract of Nux Vomica twelve grains, Aletridin, only a sufficient quantity to make a pill-mass with the preceding articles; mix them well together, and divide into twenty-four pills. The dose is one pill, to be repeated three times a day. These preparations of Strychnia and Nux Vomica should be used with great care, as, improperly used, they will produce serious effects. The dose of either should rather be proportioned to their influence upon the system of the patient using them; and it will be found that in some individuals the one-fiftieth of a grain will produce powerful results, and will have to be lessened to the one-sixtieth, one-seventieth, or even one-eightieth of a grain. The proper dose, in any given case, is to fall short of producing any immediately appreciable effects.

The bowels of the patient should be kept regular; his diet should be nutritious, easy of digestion, and the food well masticated; the surface of the body bathed with a weak alkaline solution once or twice a week, with considerable friction in drying; a cold douche to the back of the head and along the spinal column every night and morning will almost always prove serviceable; and moderate exercise should be taken every day. The sleep should invariably be on a hard bed, with as little covering as possible, and the patient should be advised never to permit himself to lie on his back.

When there is severe pain in the back of the head, or a constant, dull, disagreeable soreness, the Compound Tar plaster may be applied to the

part; first shaving off the hair. And stimulating applications along the spinal column will frequently be of advantage.

When there is spermatorrhea, pressure should be made on the prostate gland through the perineum, and if there be found any soreness, the Compound Tar plaster, about the size of half a dollar, should be placed upon the perineum, so as to keep up a free purulent discharge for some time. At the same time a weak solution of Sulphate of Zinc may be injected into the bladder, three or four times a day; or, an infusion of Golden Seal and Geranium; or, the following—take of Strychnia one grain, Nitric Acid four drops, distilled water two fluidounces; mix, dissolve the Strychnia, and filter. A teaspoonful of this may be injected into the bladder three times a day. These injections should always be employed immediately after urination, and be retained as long as possible. In some instances I have succeeded in removing the spermatorrhea by the following pill:—Take of Camphor twenty-four grains, Extract of Belladonna four grains, Oil of Cubebs twenty drops; mix, and make into a pill-mass with equal parts of powdered Magnesia and Gum Arabic. Divide into twenty-four pills, of which one is the dose, to be repeated three times a day. In some cases of spermatorrhea it becomes actually necessary to cauterize the neck of the bladder, before relief can be obtained, and this must only be done by a competent physician; but it is not so often required as has been generally supposed. Cold douche to the perineum, daily, should never be omitted, except when the Compound Tar plaster is on the part.

When there is impotency, with a diminution in the size of the male organ, the organ should be shampooed every day, and a liniment applied to it and the neighboring parts, composed of, Oil of Rosemary one fluidounce. Phosphorus twelve grains; mix in a flask, and dissolve it over a lamp, then while warm, add, Oil of Sweet Almonds one fluidounce, Tincture of Musk one fluidounce. In addition to this, the glass exhauster should be carefully applied to the part, once every day.* If necessary the following may be given internally:—take of Musk six grains, Phosphorus one grain, Ether one fluidrachm; mix, and dissolve the Phosphorus. The dose is from ten to twenty drops, to be repeated three times a day. A gentle current of electro-magnetism passed through the parts, and along the spinal column, will also prove beneficial. In all these cases, I either have the patient bathe the parts every night and morning, in a vessel containing cold water; or, else I apply a cold douche thus:—Have a tin vessel made capable of holding a quart or two, with a tube at its lower part, so fitted as to throw an upward jet, which should be quite small; the patient holding this by its handle, may douche the perineum, scrotum, thighs, nates, &c., twice a day, continuing it for ten or fifteen minutes each time. *Impotency* is sometimes occasioned in healthy persons by a want of sufficient confidence, too excessive a degree of excitability, and also, a degree of fear, or a sensation of disgust, at the time of coition; the use of liquors will likewise give rise to it. A low degree of inflammation of the prostate gland is a common cause of its presence among middle-aged married men, as I have witnessed in numerous instances.

In cases of great excitement of the genital organs, this may be subdued

* The glass exhauster is a cylindrical glass tube, about nine inches in length, and two inches in diameter; one end is open, the other is fitted with a nipple for a small exhausting pump to be placed upon, the same as in a cupping glass. The male organ being placed in this glass, the air is exhausted, the blood fills the vessels of the part, and thus excites a new action. Great care must be taken not to exhaust the air too rapidly, or to too great a degree, as injury to the parts would follow.

by pills of the Inspissated Juice of *Conium Maculatum*, or, by drinking freely of a strong infusion of the aments or catkins of the Black Willow, (*Salix Nigra*); but, under ordinary circumstances antaphrodisiacs should never be prescribed, as I believe them to be ultimately of more harm than benefit. Moral strength is the best antaphrodisiac, and this should be well cultivated.

FUROR UTERINUS, OR NYMPHOMANIA.

THIS is a morbid and uncontrollable desire for coition; when it is violent, and accompanied with libidinous speeches and actions, it is a species of insanity, and must be treated as such. But when it occurs in a minor degree, as among hysterical women, it will generally be found associated with a displacement of the womb, an unhealthy condition of the vaginal canal, leucorrhea, or an intense itching of the parts. A very common cause, among young females in particular, is masturbation, which is frequently commenced as early as at the eighth or tenth year, and continued for years afterward.

Females who masturbate have a very pale countenance, dilated pupils, a livid circle around the eyes constantly, a great tendency to palpitation of the heart, hysterical faintings, a retiring, diffident manner, and a peculiar reserve in answering the common questions relating to health. Not unfrequently there will be sores round the nails of the index and second finger, or one or more very rough and broad warts.

TREATMENT. Open the bowels by an active cathartic, and apply cooling washes or lotions to the organs of generation; warm hip baths are also useful. When leucorrhea is present, use one of the injections named under the treatment of that disease. When the nymphomania is owing to itching of the parts, it may be overcome by washing them with the Borax Lotion with Morphia, or, by applying a solution of Nitrate of Silver to them, from five to eight grains of the Nitrate to a fluidounce of distilled water. When owing to masturbation, it must be treated by abandoning the habit, with cold bath to the parts, cold douche to the head, hip baths, use of tonics, and some preparations of Iron, constant employment of mind and body, and such other measures as the case may require from time to time—some-what similar to those of the preceding subject.

ASTHMA.

ASTHMA or Phthisic, is a spasmodic affection of the lungs which comes on at uncertain periods, most generally at night, and gives rise to temporary difficulty of breathing accompanied with a wheezing sound, a sense of tightness across the chest, cough and mucous expectoration. There are two species, the dry, nervous, or spasmodic asthma, and the humid or habitual asthma; the former attacks suddenly and violently, with spasmodic constriction of the chest, slight cough, and but little expectoration toward the termination of the paroxysm; the latter comes on slowly, with full but laborious respiration, severe cough, and profuse expectoration,—it is the form more commonly met with, and attacks males more frequently than females.

SYMPTOMS. Asthma is frequently preceded for some days by warning symptoms, as, a sense of fulness about the stomach, with lassitude, drowsi-

ness, headache, flatulency, nausea, pale urine, itching of the skin, and disturbed rest; sometimes the attack is sudden, and most generally takes place at night. The patient experiences a sense of tightness across the chest, with difficult breathing, and a wheezing sound; the speech becomes uneasy and difficult, and there is a tendency to cough. These symptoms progress more or less rapidly, becoming more and more alarming in their character, and threatening suffocation, so that the patient is compelled to start up from the horizontal position and seek a window or door for fresh air. The breathing is slow and difficult, more of a gasping character, and is accompanied with a wheezing sound. The face is purplish and distended, or very pale and collapsed, a cold perspiration oozes from the surface of the body, the tongue is coated, flatulency and constipation are usually present, the pulse may be small, rapid, and unequal, or, it may be slower than usual, or, full and regular, the urine is generally in considerable quantity, pale and inodorous, but on the close of the paroxysm becomes high-colored, less in quantity, and deposits a sediment on cooling. These symptoms continue for a longer or a shorter period; but usually they decline gradually on the approach of morning, the breathing becomes more free, coughing and speaking is less difficult, more or less expectoration takes place, much relief is experienced, and the patient generally falls asleep.

The paroxysm may end for the time, in these symptoms of relief, or it may be only a remission; in the latter case, a sense of tightness across the chest, slight difficulty of breathing, uneasiness on motion, and an inability to remain in the recumbent position, will continue in a slight degree through the succeeding day; on the approach of night, drowsiness, flatulency, difficulty of breathing, and the other symptoms will gradually come on, until they become as violent as on the preceding night. And the paroxysms and remissions may continue in this manner, for several successive days, leaving the patient in an exhausted condition, with a slight feeling of tightness across the chest, and considerable tenderness of the muscles on motion. When a paroxysm of asthma has once taken place, it is very apt to return at various and uncertain periods; sometimes every year or two, at others upon every appreciable variation in the condition of the atmosphere; and again they may return regularly at stated periods, varying from one to several weeks.

CAUSES. Asthma is considered to be owing to a spasmodic constriction of the muscular fibers of the bronchia, which by diminishing their caliber and causing in them a degree of rigidity, prevents a free and full expiration. This spasm may be produced by various exciting causes, as, a cold, moist atmosphere, sudden changes of temperature, noxious or irritating vapors, dusty or smoky atmosphere, violent mental emotions, suppression of customary evacuations, severe exercise, inattention to diet, and whatever will cause irritation of the bronchial mucous surfaces. With some persons an attack of asthma is induced only by certain odors or vapors, as hay, Ipecacuanha, tobacco smoke, &c.

Sometimes asthma depends on metastasis of rheumatism or gout, dyspepsia, frequent catarrhal attacks, scrofulous taint, enlarged liver, aneurisms, polypi, &c. Sometimes it is hereditary, and at others appears to be owing to a faulty conformation of the chest.

Uncomplicated asthma is generally curable, but when it comes on in advanced life, and is connected with disease of the lungs, heart, or other vital organs, but little encouragement can be given. When the breathing becomes suddenly quick and short, the pulse weak and irregular, with paraly-

sis of the arms, great depression of strength, scanty urine, and frothing at the mouth, the danger is imminent.

TREATMENT. This consists in firstly relieving the paroxysm, and secondly making use of means to prevent its return. For arresting or mitigating the asthmatic paroxysm, there is no more valuable remedy than Lobelia. In the majority of cases the administration of this article in the preparation known as the Compound Tincture of Lobelia and Capsicum, will afford prompt relief; but, as in many instances there will be found more or less derangement of the digestive organs, it will be preferable, as a general rule, to commence the treatment during the paroxysm with an emetic, for which purpose the Compound Powder of Lobelia may be given, or the Compound Acetated Tincture of Bloodroot. After the action of the emetic, should the symptoms still continue, the Compound Tincture of Lobelia and Capsicum may be given in small nauseating doses, every half-hour, or oftener, for the purpose of producing relaxation of the spasm. In connection with this the throat, neck, chest, and upper part of the back, should be bathed with the Compound Liniment of Oil of Amber; applying it with considerable friction, and repeating it two or three times in as many hours.

Very frequently, I have succeeded in not only relieving the paroxysm of uncomplicated asthma, but in also effecting permanent cures, by the use of the following Tincture: Take of Lobelia seed, Skunk Cabbage balls, each, one ounce, High Cranberry bark two ounces, Stramonium seed, Capsicum, each, half an ounce, Alcohol five pints; mix, and let it stand for fourteen days, frequently agitating. The dose is from twenty to sixty drops three times a day; or, during a paroxysm as often as may be required.

In spasmodic asthma the following has been advised: Dip unglazed white paper in a saturated solution of Nitre, let it soak fifteen or twenty minutes, then fold it, dry in an oven or elsewhere, and set aside for use. To use it, ignite one end, and let it burn in a close room in which the patient is seated, so that he can inhale its fumes. One pound of Nitre furnishes, when heated to redness, four hundred pints of oxygen gas.

Another preparation, for similar use, is made by breaking down paste-board with hot water four fluidounces, into a kind of paste, and mixing with it the following:—Nitrate of Potassa two ounces, Belladonna, Stramonium, Lobelia, of each, in powder, twenty grains, Myrrh, Olibanum, each, two and a half drachms. After mixing all thoroughly, roll into sheets, and cut into small squares. Burn them in small saucers in a close room.

If the paroxysm be owing to checked perspiration, or to translation of rheumatism, perspiration should be produced as promptly as possible by placing hot irons, hot bottles of water, or hot bricks around the feet and limbs of the patient as he sits in bed, and administer teaspoonful doses of the Compound Tincture of Virginia Snakeroot, every hour or two. And in cases of rheumatism dry Cups along the spinal column, or Firing, will be found beneficial. Indeed, whenever the causes of the attack can be ascertained, the proper measures to remove them should be immediately put into requisition.

In the intervals between the paroxysms, treatment must be pursued either to cure the disease, or to palliate its more urgent symptoms. If there be any complication, the appropriate treatment for it must be pursued, before much benefit can be derived from the measures for relieving asthma. In uncomplicated asthma, the most rigid attention must be paid to hygienic measures; the bowels must be kept regular daily; the surface of the body must be bathed every day or two with a weak alkaline solution,

drying with considerable friction; exercise should be taken in the open air every fine day, but it should not be carried to fatigue; night air, and all causes of asthma should be positively avoided; the duration of sleep should not exceed eight or nine hours daily, the bed should be rather hard, and the bedroom should always be kept well ventilated. The diet should be nutritious but of a simple character, easy of digestion, and well masticated. Tea, coffee, fats, acids, pastry, hot bread, high-seasoned food, sweetmeats, and all intoxicating liquors should be strictly prohibited. Late suppers, as well as hearty meals at any time, must be avoided. In addition to these the above Tincture of Lobelia seed, Skunk Cabbage balls, High Cranberry bark, &c., must be used daily and persistently for some time; and the throat and chest should be rubbed twice a day with the Compound Lini-ment of Oil of Amber.

When the asthma is periodical, or complicated with other diseases, I have found the following pill very valuable: Take of Sulphate of Quinia, Extract of Stramonium, each, one scruple, Sulphate of Morphia two grains, Ipecacuanha six grains, Capsicum twenty grains; mix, and divide into twenty pills. To make the pill-mass, it will sometimes require the addition of a little Simple Syrup. The dose is one pill, to be repeated three or four times a day. This is intended for the asthma, and not its complication, which, of course, will require additional means. This pill may also be used every hour in the remissions of asthma, in order to prevent or mitigate the subsequent paroxysm.

Among the agents that have been occasionally found useful in asthma, may be named, a cupful of clear, strong coffee, every half-hour or so; smoking Stramonium leaves; inhalation of Chloroform and Nitrous Ether; and the following:—Take of Lobelia one pound, Alcohol, Spirit of Nitrous Ether, four pints, Sulphuric Ether four fluidrachms; Macerate for fourteen days, and keep perfectly excluded from the light. The dose is a teaspoonful or two as often as required. In one case of asthma of about twelve years standing, I effected a permanent cure by the application of the Compound Tar plaster between the shoulder blades, and the internal use of Quinia and Tincture of Black Cohosh, prepared and given as named under the treatment of Intermittent Fever.

ANGINA PECTORIS.

ANGINA Pectoris, also known by the names of *Breast-Pang*, *Spasm of the Heart*, and *Neuralgia of the Heart*, is a disease the pathology of which is not positively determined. It is a very dangerous disease, being often associated with ossification, or other abnormal condition of the heart. The disease occurs in paroxysms, arising suddenly, and ceasing suddenly.

SYMPTOMS. In the first attack, which is generally experienced after some unusual exertion, as going up a hill, or up stairs, or walking quickly, especially after a full meal, the symptoms are usually rather mild in most instances; but as the disease advances the symptoms become more severe, and are excited by very slight causes, as mental emotions, walking, riding, coughing, sneezing, talking, straining at stool, &c. Sometimes the patient is attacked early in the morning, and often without any previous exertion or obvious cause.

The patient when attacked, suddenly experiences an acute pain at the lower extremity of the breast-bone, which extends to the left side and back-bone, and up into the left arm, and is accompanied with a sense of impend-

ing suffocation, great anxiety, and a feeling of approaching death; the pulse becomes feeble and irregular, or it may be strong and regular, the face pale and covered with a cold sweat, and the patient appears to have lost both sense and motion. After a few minutes, the pain suddenly subsides, and the patient is enabled to move and talk again; and thus these attacks may go on, recurring at irregular intervals, varying from a few weeks to a year, or more, the intervals becoming shorter and shorter, with the persistence of the malady, until the patient is carried off in one of these sudden paroxysms. These symptoms will be found to vary much in their severity, as well as in the regularity of their attacks.

CAUSES. It appears to be owing to a convulsive or spasmodic action of the heart, and attacks those who are apoplectic, sedentary, corpulent, and of gouty or rheumatic habit. Persons under fifty years of age, are seldom attacked by it; and males are more liable to it than females. It is frequently associated with organic diseases of the heart, or its arteries, and in such cases, a cure is rarely effected.

TREATMENT. This is divided into that during the paroxysm, and that during the interval. In the paroxysm, stimulants and antispasmodics must be given, and probably the most effective among them is the Compound Tincture of Virginia Snakeroot, a teaspoonful or two of which should be administered at once in a little water, and repeated every few minutes during the continuance or recurrence of the fit. Other preparations, however, have been used with success, as equal parts of Ether, Laudanum, and Tincture of Castor, in teaspoonful doses; or Ammoniated Tincture of Castor; or the Compound Tincture of High Cranberry bark. In addition to these, dry Cupping, or Firing should be freely applied along the chest, over the heart, and along the upper part of the spinal column, the patient should be kept perfectly quiet, and the extremities should be well rubbed to aid in recovering the accustomed action of the heart. In cases of fainting, Ether, or Spirits of Ammonia, may be sprinkled on the face, neck, and breast; and if it continues too long, slight electro-magnetic shocks may be passed through the region of the heart, with frictions of stimulating mixtures to the limbs. After a recovery so that the patient can swallow, a mild cathartic may be given, if we know that there are accumulations in the bowels, but not without; and in pale, bloodless countenances, the purgative had better be omitted entirely.

During the intervals, the treatment must be to prevent any subsequent attack. And to do this effectually, the general health of the patient must be enquired into, and if it be found that he is laboring under any other disease, as gout, rheumatism, &c., these must be combated by their appropriate treatment, while, at the same time, means must be pursued designed to lessen or withdraw the irritation, and at least check the tendency to attacks from minor causes.

The bowels should be kept regular daily, the surface of the body frequently bathed with a weak alkaline solution, the kidneys kept in healthy activity, and the Compound Tincture of High Cranberry bark, the Compound Pills of Aconite, the Compound Pills of Black Cohosh, or the Compound Pills of Hyoscyamus, administered internally. Either of these will be found very efficacious, but I prefer the first-named tincture. Acidity of the stomach, when present, is best removed by Carbonate of Ammonia. In addition to these measures, the Compound Tar plaster should be applied alternately over the region of the heart, and between the shoulders, keeping up a discharge from each location as long as the patient can bear it. All sources of irritation, mental inquietude, and sudden gusts of passion,

should be vigilantly guarded against; moderate exercise in the open air, by riding or sailing, will be useful, and in ascending hills, or stairs, &c., the utmost care and deliberation must be taken. The other necessary hygienic measures will be similar to those already named under asthma. In three cases, I have found marked benefit from the use of the Compound Tincture of High Cranberry bark, and Compound Tar plaster, in conjunction with the following:—Take of Muriate of Ammonia sixty-four grains, Fluid Extract of Wild Cherry bark four fluidounces; mix. The dose is half a table-spoonful three times a day.

HOOPING-COUGH.

HOOPING-Cough, or Pertussis, is a disease which commonly occurs but once in a lifetime, and almost always in infancy or childhood, or the first time the person is exposed to the peculiar exciting cause. The ages in which it more generally appears, vary from two to ten years. Occasionally, instances have occurred where individuals have been attacked with it at two, or even three different times.

SYMPTOMS. The disease has been divided into two stages. The first stage presents the usual symptoms of catarrh, as languor, restlessness, feverishness, loss of appetite, sneezing, coughing, and after the first day or two, an increased secretion of mucus from the nose. Sometimes these symptoms are much more severe, with considerable oppression and general distress. And in a few cases, the first stage is absent, the child being at once seized with the characteristic cough.

After twelve or fourteen days, the catarrhal symptoms gradually subside, the pulse becomes more natural, and the appetite returns. The cough, however, remains, or even appears aggravated, and changes its character. Instead of being a simple cough with few succussions, it is prolonged by a number of expiratory efforts in succession, and at its termination, we occasionally hear a forcible inspiration, accompanied by a loud, ringing sound.

The cough usually comes on suddenly, and the paroxysm consists of a number of short expirations, in such quick succession, and made with such violence, as would appear to threaten the patient with suffocation. The extremities become cold, the face and neck turgid and livid, the forehead covered with sweat, the eyes protruded and full of tears. This is followed by one or two full, violent, and noisy inspirations, producing the characteristic hooping sound,—this is succeeded by another fit of coughing, and another hoop, and thus continued in the same manner, until a quantity of mucus is vomited or coughed up, and the paroxysm is terminated. The paroxysm, or several of them in succession, may last from one to fifteen minutes, and if it be very violent, some small vessels may be ruptured, and blood escape from the mouth or nose, or mixed with the expectoration. In the intervals between the paroxysms, after a recovery from the exhaustion produced, the child appears tolerably well and cheerful, except when the attack has been severe, it will then be pale, thin, and languid. The fits of coughing vary in frequency, they may come on every five, ten, or fifteen minutes through the day, or only every hour or two; sometimes they assume a periodic character, returning at a given hour, and proving very obstinate.

In the first stage, the expectoration is a frothy mucus; in the second stage, it may be clear, transparent, yellow, or even puriform, yet so thick, tenacious, and ropy, that it may be drawn out of the child's mouth by the fingers. The second stage lasts from six weeks to six months, but usually the entire duration of the disease is from two to four months.

CAUSES. It seems to depend upon a specific contagion; and it is very rarely we meet with single cases of hooping-cough, for almost invariably, it spreads through a whole city or town, either by epidemic influence, or by a contagion, of the peculiar nature of which we are at present quite ignorant.

PROGNOSIS. Simple hooping cough is rarely fatal; the greatest danger is from exhaustion. But when it is complicated with some other disease, as bronchitis, pneumonia, congestion of the brain, apoplexy, dysentery, &c., it is apt to prove more or less serious, according to the nature of the attack, and the character and severity of the complication. Hence, every organ of the body should be carefully examined in hooping cough, and the complications treated as named under their respective heads.

TREATMENT. During the first stage, the treatment will be similar to that named under Catarrh; but it is seldom that a physician is called to a case until in the second stage, and frequently not until this is somewhat advanced. When the hooping cough is uncomplicated, I have found the following a most valuable preparation: Take of Alcoholic Extract of Belladonna five grains, water one fluidounce and a half, Alcohol one fluidrachm; rub these up together, and add to them Salt of Tartar (*Subcarbonate of Potassa*,) fifteen grains, finely powdered Cochineal ten grains, Loaf Sugar sufficient to make it palatable. The dose of this for a child two or three years old, is half a teaspoonful or one teaspoonful four or five times a day, or enough to produce a dilatation of the pupils, and when this dilatation is produced the medicine must be omitted till next day, and then repeated and so on daily. In conjunction with this, the bowels must be kept regular daily, by doses of the Compound Powder of Rhubarb and Potassa, and the neck, throat, chest, and upper portion of the spinal column be rubbed twice a day, or oftener, if desired, with the Compound Liniment of Oil of Amber. An infusion of Maidenhair may be drank freely, and will be found a very valuable and pleasant drink. This course I have found most generally to check the disease promptly, or at all events lessen its severity.

A host of remedies have been recommended from time to time for the cure of this disease, and among them I have found the following to be the most efficacious, either of which may be used in the absence of the above Belladonna mixture:—

1. Compound Tincture of Lobelia.
2. The Compound Tincture of High Cranberry bark, is a most valuable preparation, especially for advanced children. In conjunction with Quinia, it will be found useful in those obstinate cases, which resist the ordinary treatment.
3. Take of Tincture of Black Cohosh root, Tincture of Bloodroot, Tincture of Skunk Cabbage, each, one fluidounce, Essence of Anise, half a fluidounce; mix. To a child a year old, the dose is ten or twenty drops in sweetened water, repeating it several times a day.

Dr. G. D. Gibbs has recommended the following, and its use has been followed by beneficial effects: Take of dilute Nitric Acid twelve fluidrachms, Simple Syrup enough to fill a four ounce vial; mix. To an infant, the dose is a teaspoonful, to a child two years old, two teaspoonfuls, repeating the dose every two or three hours. He says it is a tonic, supplies the blood with nitrogen, which removes or neutralizes the excess of fibrin existing in that fluid at the time, and which is a great source of danger. It arrests the paroxysms, and removes the hoop; but should not be used in cases of complications.

When there is a profuse discharge of mucus, it may be lessened by Tannic Acid, Benzoic Acid, Balsam of Canada, or Alum, in doses suited to the child's age.

The child should be permitted to go out in pleasant weather during the warm part of the day, and exercise moderately. His diet should be nutritious, but easy of digestion, as bread-pudding, chicken-broth, Indian meal gruel, and if there be no fever, a little boiled chicken, or tender meats. The rooms in which he passes the day and night should be well ventilated, and of a comfortable temperature. In some instances a change of air will effect a cure, when every thing else fails. I have seen good results accompany the inhalation of an atmosphere moderately impregnated with Sulphureted Hydrogen gas. Tincture of Cantharides has been recommended as an efficacious remedy in whooping-cough, but I have not tested it.

HICCUGH.

HICCUGH, or Singultus is a spasmodic affection of the stomach and diaphragm, or midriff, and is generally caused by some irritation of the nerves of these parts. When hiccough is present toward the close of some acute or long standing disease, or after mortification has taken place, it is an indication of approaching dissolution; at other times it generally occurs from acidity of stomach, eating too rapidly, eating or drinking too much, flatulency, use of intoxicating liquors, indigestible food, &c., and is usually removed without trouble.

TREATMENT. Ordinary hiccough may frequently be removed by suddenly starting the person affected, arousing a feeling of surprise, fear, or anger; a few small draughts of cold water in quick succession, will also remove it, as well as holding the breath for a certain length of time. When these simple measures fail, recourse may be had to the Compound Spirits of Lavender, Essence of Peppermint, Ether, or a teaspoonful of Vinegar, or of Lemon juice, or a little peppermint water, acidulated with a few drops of Sulphuric Acid. When the stomach is acid, a little Magnesia, or Solution of Bicarbonate of Soda may be combined with the aromatic. or a small quantity of Aqua Ammonia may be taken. Sometimes, in obstinate hiccough, a Mustard poultice over the region of the stomach will afford relief. Chloroform inhaled as often as the hiccough returns will frequently be effectual. Intermittent or periodical hiccough may be removed by the following, administered as often as required: Take of Bicarbonate of Soda three grains, Sulphate of Quinia one grain, Opium half a grain; mix for a dose.

SYNCOPE, OR FAINTING.

SYNCOPE, or Fainting is owing to a diminished action of the heart, amounting sometimes to a total cessation.

SYMPTOMS. It is frequently preceded with an indescribable, anxious sensation as it were, about the heart, with a sense of fulness passing from the stomach up to the head, vertigo or a confusion of ideas, dimness of sight, and cold extremities. Sometimes the patient retains his senses, having a pale countenance, cold surface, weak pulse, and trembling of the heart, the breathing being barely perceptible; but in perfect syncope, there is a sudden annihilation, apparently of the animal and vital powers; not

the least indication of life can be discovered, the pulse is not perceptible, the eyes are shut or half-closed, the face is cold and deathly pale, the limbs are relaxed, and there is hardly any apparent breathing. On recovery, the patient sighs deep and heavily. Sometimes syncope terminates in vomiting or epileptic convulsions.

CAUSES. Syncope may be produced by anything that exerts a depressing influence upon the vital powers, as, profuse evacuations, especially of blood, violent and long-continued exertions, great external heat, disgusting sights, excessive pain, sudden and violent mental emotions, intense application to study, certain odors, and derangement of the digestive organs. It sometimes follows the operation of tapping, in dropsy, and is a symptom of affections of the heart and brain, aneurism of the aorta, polypus of the heart, &c.

TREATMENT. The patient should be placed in a recumbent position, where there is a free admission of pure, cool air; the face should be sprinkled with cold water or Spirits of Ammonia, and considerable friction should be applied to the arms and legs. As soon as possible, a teaspoonful of Compound Spirits of Lavender may be placed in a little sweetened water, and ten or twelve drops of Aqua Ammonia be added to it, and the whole given for a dose, repeating it in a few minutes, if necessary. When the syncope is owing to great loss of blood, the strength of the patient must be sustained until proper reaction takes place by powerful stimulants, as Brandy, Ether, Ammonia, &c. Individuals who are subject to fainting, should avoid all crowded or confined places, should endeavor to keep an equable mind, not allowing themselves to be suddenly acted upon, and should not wear any cravats, or other tight bandages. They should also strengthen the system by cold bathing, proper diet. and the use of vegetable bitter tonics.

VERTIGO.

VERTIGO, or Giddiness in the Head is generally owing to a fulness of the bloodvessels of the head, and may be symptomatic of dyspepsia, apoplexy, hysteria, hypochondria, or epilepsy. When it arises from hysteria, or other nervous disorder, it is seldom dangerous, but is always more or less so, when it arises from an undue amount of blood in the head, frequently terminating in palsy or apoplexy. Difficult or painful menstruation often occasions it.

SYMPTOMS. There is a sudden seizure of swimming in the head, objects appear dim, and as if they were turning round, and the patient staggers, and is liable to fall. This lasts for a few minutes, and either disappears, or is followed by apoplexy, an attack of hysteria, or epilepsy.

TREATMENT. Ascertain the cause of the difficulty, and remove that, if possible, by appropriate treatment. Usually, the application of cold water to the head, and a brisk cathartic will remove it. Persons subject to giddiness should eat sparingly and of easily digestible food, keep their bowels regular daily, take moderate exercise every day, keep the feet warm and dry, not lose too many hours per day in sleep, and avoid tea, coffee, fats, indigestible meats, suppers, intoxicating liquors, and every thing calculated to injure the brain and nervous system.

PALPITATION OF THE HEART.

PALPITATION of the Heart is symptomatic of some other disease, but is often so severe as to require a distinct consideration. There is a rapid beating or fluttering motion of the heart, which may be felt very plainly when the hand is placed upon the chest over this organ. Various other symptoms may accompany it, as, a shortness of respiration, a sense of pain in the neighborhood of the heart, a feeling of constriction across the chest, inability to lie down, pale countenance, swollen feet, great debility, irregular or intermittent pulse, much distress on slight exertions, &c. The palpitation may vary from a simple, full, uniform, powerful beating of the heart, to a rapid, violent, confused and irregular action, shaking the whole system, and producing very disagreeable sensations.

CAUSES. Palpitation of the heart is generally owing to dyspepsia, or some derangement of the digestive functions; occasionally it occurs as a symptom of some nervous disorders; and it frequently accompanies enlargement of the heart, dropsy of the heart, and other diseases of this organ and its arteries. It may also be brought on by great mental excitement, intemperance, masturbation, excess in venery, &c.

TREATMENT. When the palpitation is owing to disease of the heart, relief is all that can be expected unless the disease be cured, and the same may be said when it is owing to dyspepsia or other affections; but diseases of the heart are not so readily curable as many other maladies. Whatever may be the disease occasioning the palpitation, it should be treated and removed if possible.

In nearly all cases, palpitation of the heart may be lessened or checked by the administration of ten or fifteen drops of Tincture of Digitalis, repeated three or four times a day; or, by a similar dose of the Tincture of Sheep Laurel. I have found the following an excellent preparation for palpitation: Take of Tincture of Musk, Tincture of Sheep Laurel, Ether, and Essence of Cinnamon, each, equal parts; mix. The dose is from ten to thirty drops, in a little water, and may be repeated three or four times a day. When there is acidity of stomach, this should be neutralized by Magnesia, Carbonate of Ammonia, or Prepared Charcoal. In palpitation of the heart accompanying hypertrophy of the organ, I have witnessed the happiest results from a pill composed of two or three grains of the Inspissated Juice of Conium Maculatum. The diet and regimen should be the same as mentioned under Asthma and Angina Pectoris.

NIGHTMARE.

THE NIGHTMARE, or Incubus, is a certain uneasy sensation during sleep, of weight and oppression upon the chest, with more or less difficult breathing, great anxiety, and dreams of monsters, or else of some terrific circumstances, being most always accompanied with terror, and paralysis of the voluntary muscles; in the ineffectual efforts made by the patient to rid himself of his imaginary trouble, he frequently utters a loud and rather frightful noise. It is impossible to describe the various unpleasant dreams which are present in nightmare; the person is generally exposed to some danger from monsters, wild animals, assassins, &c., and is unable to free himself from them, being deprived of motion. Sometimes the patient lies in a half-waking state, and is aware that he is in bed and dreaming, but he cannot immediately divest himself of the impressions made upon his mind, and frequently,

even after awaking, will, for some time, remain uneasy, from a feeling that some one is in his bedchamber. There is often a sense of weight at the stomach, an unpleasant taste in the mouth, and palpitation of the heart. Nightmare is considered a trifling complaint, but it is by no means improbable that many persons who have been found dead in their beds were destroyed by it.

CAUSES. This symptom is common to hypochondriacal and nervous persons, to those who lead a sedentary or indolent life, and even sailors are subject to it. But the healthiest person may be attacked by it when any indigestible food remains in his stomach during the hours of sleep. It principally arises from indigestion, and is very apt to follow a late and hearty supper, and more certainly, if the food be indigestible or of a flatulent nature. It more commonly occurs when the individual lies on his back, though I have known it to take place while lying on one side. It may also be produced by great anxiety of mind, profound meditation, fatigue, late hours, intemperance, a constipated condition of the bowels, and the use of Opium. Acidity of stomach is generally present, and produces the worst kind of dreams.

TREATMENT. Dyspeptic persons may free themselves from this disagreeable symptom, by keeping the bowels regular, and neutralizing any acidity of stomach. They should not use flatulent food, or that which is difficult of digestion, and should eat no suppers; regular exercise daily, lively company, temperance, and an avoidance of all gloomy meditations, severe study, and indolence, are important measures to be attended to in the treatment. Beside, they should accustom themselves not to lie on the back, and should have some friend to sleep near them, so as to be immediately awakened on their moaning or making a noise in the fit, for the sooner a person is roused from a paroxysm of the nightmare, the better, as, when in a very high degree, it differs little from a fit of epilepsy. On awaking from the nightmare a teaspoonful of the Compound Spirits of Lavender in a little water will remove flatulency and uneasiness of the stomach, and prevent another attack. Where persons are subject to nightmare, from flatulency and acid stomach, the following, taken before retiring to bed, will usually prevent an attack; Take of Essence of Peppermint ten drops, Carbonate of Potassa ten grains, Tincture of Capsicum five drops, water one fluidounce; mix, for a draught.

GASTRIC AND INTESTINAL DISEASES.

UNDER the above caption are meant those diseases which are located in the stomach, as well as in one or more of the abdominal viscera, not including those which have been referred to in other parts of the work.

INDIGESTION, OR DYSPEPSIA.

DYSPEPSIA is one of the most frequent diseases with which the physician meets; it is found in every country, at every season of the year, and among all classes of society, and is more generally a malady of middle age, young persons being, as a common rule, exempt from it. It usually commences gradually and in a very insidious manner, producing more or less distress, and, in many instances, rendering life a burden. (See Chronic Inflammation of the Stomach, page 280.)

SYMPTOMS. The symptoms of dyspepsia are various, scarcely any two

persons experiencing exactly the same, though there are a few common to all. At first there may be a sense of fulness, distension, or weight in the stomach, a changeable appetite, generally feeble, and sometimes entirely lost; occasionally the appetite is voracious, or morbidly craving, and if the patient makes a full or hearty meal, he becomes low-spirited, with more or less weight or pain in the region of the stomach which continues for some time after eating,—sometimes there is a desire to eat after having already eaten, and the first mouthful satisfies; there is a constant uneasy feeling, or weight, or pain, in the region of the stomach; flatulence and acidity of the stomach are very common symptoms, and frequently, eructations of a sour or disagreeable nature; not unfrequently, there is water-brash, or the vomiting of a clear, glairy liquor, more especially when the stomach is empty; a sensation of sinking, or a fluttering at the pit of the stomach; tenderness over the stomach upon pressure; and sometimes nausea, and even vomiting; occasionally a loathing of food; the mind is usually depressed or languid; there is a disagreeable taste in the mouth, especially in the morning on first waking; the tongue is covered with a whitish fur, and sometimes its papillæ are enlarged; headache is common; heartburn; palpitation of the heart, or strong pulsation in the region of the stomach; constipation; urine high-colored and scalding. When the nervous system is implicated, the whole system becomes languid, with great depression of spirits, hypochondria, and fear of death, or impending evil. As the disease progresses the pulse becomes corded and frequent, all the previous symptoms are aggravated, the mind frequently becomes irascible, dissatisfied, and despondent; colic pains occur more frequently and more violent; constipation is more obstinate, or a diarrhea may take place, in which the food passes imperfectly digested; emaciation and loss of strength ensue, the countenance becomes sallow with a wild, anxious appearance, the skin dry and wrinkled; there is often a difficulty in lying on the left side, and a morbid susceptibility to cold. Nightmare is a common occurrence among dyspeptics.

Dr. Avery divides derangement of the digestive organs, into three species, although other writers have enumerated several. He considers the first species to “consist in an enfeebled condition of the stomach, which secretes a preternatural quantity of highly acid fluid, unfit for the process of healthy digestion. The prominent symptoms are, incessant, dull headache, especially aggravated after dinner, flatulence, an uneasy gnawing sensation in the stomach when empty, usually mistaken for hunger, heartburn, acid eructations and belching, especially after eating, profuse flow of saliva into the mouth, tongue lightly coated, and an unpleasant taste in the mouth in the morning. There is sometimes thrown up a short time after eating, especially the breakfast, a considerable quantity of limpid, sour fluid, so acrid as to give a scalded appearance to the tongue and throat; sometimes it is mixed with bitter and oily matters, but rarely with any of the food taken. If indigestible food, as fatty meats, or a considerable quantity of any fluid be taken at meals, for some hours after, the distress is increased, all the symptoms aggravated, and a general feverish disposition induced. Notwithstanding all this disturbance in the stomach, the bowels often continue nearly regular, and the action of the liver not seriously deranged, particularly in such as have frequent acid eructations. This species is often attended with a train of symptoms, which pass for nervous, and which are only to be overcome by *correcting the acidity of the stomach*. A part of this acid no doubt arises from the ingesta undergoing the acetous fermentation during digestion; but much the greater part of it is a secretion of the stomach,—a vitiated gastric juice, caused by indigestible or improper food taken into an enfeebled stomach.”

"The *second species* is marked by hepatic derangement combined with imperfect digestion. This form is apt to occur, or become aggravated, during summer, and to remit as cold weather approaches. Its leading features are connected with bilious disorder, as remarkable depression of strength, with languor and listlessness, especially on rising in the morning, bitter, disagreeable taste in the mouth, yellow fur on the tongue, torpid and irregular bowels, high-colored urine, restless, feverish nights, and progressive emaciation. The patient often complains of vague pains shooting in various directions, sometimes in the shoulders, back of the neck, and at other times in the sides or pit of the stomach, and a sense of weariness in all his limbs; almost constant aching in the back and loins, with a numbness of the right side and arm, or a burning sensation at the pit of the stomach. The complexion is often of a dingy hue, and the eyes have occasionally a yellow tinge. The state of his strength is very uncertain and variable, sometimes he can scarcely lift up his hand, and soon after he will walk a mile without much fatigue. All his complaints are greatly aggravated by eating, and he obtains so much relief from fasting, that he dreads the return of meals, which invariably add to his mental, as well as his bodily suffering, by plunging him into gloom and melancholy, till finally his temper is rendered so irritable and impatient, that no fortitude can repress its sallies.

"The *third species* depends upon a morbid sensibility or irritability of the inner surface of the stomach and bowels, with more or less hepatic derangement. It presents itself in two forms, either with or without marked symptoms of indigestion. In the former, it often goes to the extent of painful indigestion, especially on taking any stimulant article; in some cases, any solid substance, as a crust of bread, will bring it on, so that the patient is obliged to confine himself to light fluid nourishment, in order to avoid the gastric distress, the tormenting headache, the nervous agitations, the palpitations, and finally, the faintness, nausea, and vomiting, that is apt to ensue on the least error of diet. When the disease arrives at this stage, the head is seldom free from pain; solid food is rejected without having undergone the least change, after remaining for hours in the stomach; the bowels become torpid; the complexion dingy; the strength and flesh waste rapidly, and the nights are restless, feverish, and disturbed by frightful dreams. The functions of the liver are generally much deranged, producing pain in the side, slight, hacking cough, a sensation of weariness, or pain in the back, loins, and limbs; listlessness, with dejection of mind and gloominess. A most distressing train of nervous symptoms is often connected with this form of the disease. The most trifling occurrence frightens and agitates the patient, produces palpitations, and shows his whole nervous system to be acutely sensible. His bowels also become so morbidly irritable, as to be acted on violently by the smallest quantity of cathartic medicine, producing pain and uneasiness which induces the patient to delay its repetition as long as he possibly can.

"The other form of this species is the most melancholy of all these derangements. It is usually known by the name of low spirits, hypochondria, melancholy, &c., and is extremely various in its character and forms. Indigestion seldom forms a prominent feature of the disease; often, indeed, there are but few or no symptoms of such derangement present, in which case the true seat and nature of the disease may be wholly overlooked. The persons most subject to this form are generally past the meridian of life, and such as have been engaged in active business, particularly in hot climates. Flatulence, eructations, sense of distension and weight at the stomach after eating, irregular bowels, &c., are present in some cases; in others, there are no indications of bad digestion, or at least very slight ones. When they do exist,

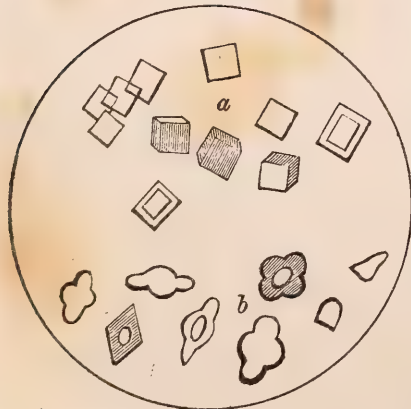
however, they are apt to be overlooked in anxiously attending to the sympathetic affections of other parts. In some instances the head is affected with giddiness, and confusion of ideas, ringing in the ears, and indistinct vision. In others, the action of the heart becomes exceedingly irregular, throbbing, and beating violently against the side, now and then intermitting, and occasioning great distress and anxiety. Sometimes there is a severe smarting and pain in voiding the urine, which is often scanty, turbid, and high-colored, then again abundant and colorless. But it would be fruitless to attempt to give a description of all the varied forms of this Protean disease; one character, however, is common to them all, and that is the most dreadful mental dejection, and a disposition to magnify every unpleasant feeling, and to look upon their complaints as incurable and fatal. The bile, in the worst forms of this species, is often greatly altered from its healthy condition; it becomes thick, ropy, and tenacious, like birdlime, and so acrid as to irritate and excite excessive pain in the parts it passes over."

Fig. 25.



a. Octohedral crystals of oxalate of lime. *b.* The same, when dry.

Fig. 26.



a. Crystals of uric acid, squares or cubes. *b.* Crystals of uric acid, rare forms.

sometimes dries at night, costive bowels, and heavy or disturbed and unrefreshing sleep. The triple phosphates, known by their minute triangular prisms, sometimes truncated at their edges, and bevelled at their extremities, are associated with a state of depressed nervous energy, and will be found in the urine passed sometime after meals, or in the morning urine. (See Figs. 22 and 28.)

Upon a microscopical examination of the urine of dyspeptic persons, three kinds of deposit may be met with, namely, Oxalate of Lime, Urates, and Triple Phosphates. The Oxalate of Lime, which may be known by its octohedral crystals, (See Fig. 25,) is generally due to the absorption of oxalic acid itself taken as food, or to mal-assimilation of saccharine principles, and is often accompanied by more marked and obstinate disturbance of the heart's action than accompanies other forms of dyspepsia. It may be present in the urine without the existence of any appreciable disease, disappearing after a time; but when connected with indigestion, the patient is troubled with flatulency, is weak and readily fatigued, perhaps grows thinner, sleeps badly, has palpitation of the heart, becomes depressed in spirits, and irritable in temper, and has, or fancies he has, deficiency of sexual power. Sometimes he has a sense of uneasiness or pain across the loins, empties his bladder frequently, and in some cases is affected with boils, or a scaly eruption. The urate of ammonia, or uric acid gravel, (See Figs. 26 and 27,) may be the passing consequence of an excess at table, or may result from habitual high living, or be connected with a gouty constitution; an abundant deposit is usually associated with deep-seated disease of the liver. With this species of indigestion, there is often a torpor of the liver, yellow complexion, coated tongue, which

CAUSES. One of the most common causes of dyspepsia is hasty and imperfect mastication of food with want of exercise. To insure health, both the mind and body should be properly and regularly exercised, with appropriate intervals of rest or recreation. Dyspepsia is especially common to those who eat hastily and in large quantity, as among merchants, travelers, and hotel boarders. It may also arise from improper food thrown into the stomach, use of powerful stimulants, alcoholic liquors, high-seasoned dishes, too frequent use of warm fluids, use of tobacco either chewing or smoking, late hours, profuse evacuations, excess in venery, masturbation, sedentary life, indolence, mental depression, great anxiety, and anything which diminishes the energies of the stomach and destroys or impairs its susceptibilities. It is frequently associated with deficient secretion of bile or gastric juice, diseases of the liver, spleen, and womb, rheumatism, gout, chlorosis, &c.

TREATMENT. This may be divided into medical and hygienical; but as no positive rules can be given to suit all cases, without entering into a lengthy detail, I will merely give the general principles of management of this disease.

In the first place, a very important point is, to keep the bowels regular, and it will be found that in this respect there will be a great diversity in the action of medicines upon various patients; hardly any two being operated on exactly alike. I am decidedly opposed to the use of emetics in the treatment of this disease, except when given, and very rarely too, to remove offending matters from the stomach, or to arouse a torpid liver. But laxatives, and occasional purgatives, are almost always necessary. In former years I treated dyspepsia very successfully by the administration of one of the following powders: 1. Take of Bayberry bark, Prickly-Ash bark, Golden Seal, Bitterroot, Bicarbonate of Soda or Potassa, each, in powder, equal parts; mix. This is for recent cases with want of tone in the stomach, slight constipation, and acidity; the dose is from half a teaspoonful to a teaspoonful three times a day. 2. Take of Blue Flag, Mandrake, Bitterroot, each, in powder, one ounce, powdered Bloodroot half an ounce, Capsicum two drachms; mix. This is for old, long-standing cases, with obstinate constipation; if acidity is present add Bicarbonate of Soda or Potassa one ounce. The dose is the same as the preceding. These are excellent medicines, and will be found occasionally useful even at the present day, but the recent improvements in the Materia Medica enable us in the great majority of cases to dispense with them.

The articles I now employ to regulate the bowels, vary according to their action. That which I employ the most frequently in this and all other diseases of a chronic character, is composed of Powdered Rhubarb two ounces,

Fig. 27.



a. Ordinary appearance of urate of ammonia. b. Urate of ammonia, less common than the preceding.

Fig. 28.



b. Penniform crystals of triple phosphate. a. Mixed phosphates; amorphous phosphate of lime.

Bicarbonate of Potassa one ounce; of this mixture enough is given for a dose, and repeated three times a day, to produce one, but never more than two daily alvine evacuations, approaching as nearly as possible to those of health. It neutralizes acidity, arouses hepatic and peristaltic action, and imparts tone to the whole alimentary canal. But occasionally, instances will be met with, in which, even in large doses, this will produce no effect, and then other remedies will have to be used, among which I will name the following:—

1. Take of Leptandrin three drachms, Podophyllin, Apocynin, each, one drachm, Alcoholic Extract of Nux Vomica twelve grains, Castile Soap, a sufficient quantity to make a pill-mass; mix together, and divide into pills of three grains each, of which one may be given every night.

2. Take of Tincture of Mandrake, Tincture of Blue Flag, each, one fluid-ounce, Saturated Tincture of Nux Vomica, according to its action on the person; mix. The dose is ten or twelve drops, to be repeated three times a day. (See Constipation.)

Another important indication in treatment will be to neutralize and remove acidity of the stomach; in many cases the above preparation of Rhubarb and Potassa will effect this, but sometimes it will be found a very troublesome matter, requiring various agents before any benefit will be obtained. Prepared Charcoal in teaspoonful doses, three times a day, will be frequently effective; or Magnesia may be given, either alone, or in combination with the Trisnitrate of Bismuth. A very excellent preparation is equal parts of Powdered Guaiacum, Rhubarb and Prepared Charcoal, of which mixture a teaspoonful may be given two or three times a day in milk, yolk of egg, or Indian meal gruel; omitting, of course, other laxatives, should this act as such. Another good remedy is composed of Leptandrin two grains, Hydrastin one grain, Dried Ox Gall five or ten grains; mix for a dose, and repeat two or three times a day; if there be much debility of the stomach, a grain or two of Capsicum may be added. When there is acidity of the stomach in the oxalate of lime dyspepsia, the best remedy is Nitro-Muriatic acid in doses of five drops every four hours, in a cold infusion of Colombo and Golden Seal. Or, the Tincture of Muriate of Iron in doses of ten drops may be advantageously substituted in some cases. But be very careful to administer none of the above remedies unless they are positively and distinctly indicated, for many are the dyspeptic stomachs which have been "torn to pieces," and ruined forever by the injudicious exhibition of medicines. Medicine should never be given except with the view of producing a certain necessary effect; if this effect is not known, spare the patient and administer no medicine. It is better to trust to the resources of nature than to throw drugs blindly into the system. The true practice of medicine consists, not in enormous doses of drugs, to ascertain how much a patient may take and recover, but in curing any given disease with the least medicine possible; and he is the best physician who can cure his patients without any physic; but, strange to say, the public have, unfortunately for themselves, formed a different opinion.

The principal object in dyspepsia is to restore tone to the stomach, all other means are merely auxiliary, instituted to meet certain urgent symptoms. The agents for this purpose are, chiefly Hydrastin, Aletridin, Alcoholic Extract of Nux Vomica, Black Alder bark, Solomon's Seal, Colombo, Gentian, Compound Tincture of Tamarac bark, and Compound Pills of Eupurpurin. But the agent which I prefer to any other is the Compound Pill of Ptelein, composed as follows: Take of Ptelein, Hydrastin, each, twenty-four grains, Extract of Belladonna three grains, Alcoholic Extract

of Nux Vomica two grains; mix, and divide into twenty-four pills, of which, one is the dose, to be repeated three times a day. This is to be administered in conjunction with the free use of an infusion of equal parts of Solomon's Seal and Black Alder bark. In most cases these pills may be used without any auxiliary measures, and with the most permanent benefit. In long-standing cases, or in patients of strumous habits, the following may be given in addition: Take of Iodine twelve grains, Sulphate of Morphia three grains, Burnt Sponge twenty-four grains, Extract of Liquorice a sufficient quantity to make a pill-mass; mix all thoroughly together, and divide into twenty-four pills, of which, one may be given every night and morning. I have often found the most beneficial results to accrue from the use of the following mixture: Take of Precipitated Carbonate of Iron ten drachms, Inspissated Juice of Conium Maculatum five drachms, Tincture of Balsam Tolu six fluidounces, Oils of Cinnamon and Wintergreen, each, twelve drops, White Sugar, two ounces, Madeira Wine, Water, of each, half a pint; mix together; in a week the mixture will be ready for use. It may be given in doses of from a fluidrachm to half an ounce, from three to six times a day.

I will now mention some other auxiliary treatment which may be pursued to remove certain unpleasant symptoms. A *high-colored and scalding urine* may be removed by an infusion of Marshmallow root and Spearmint, or by the use of the Compound Infusion of Trailing Arbutus; this urine will generally contain the urates and uric acid. When phosphates are deposited there is no better agent than the Compound Balsam of Sulphur.

Excessive flatulence, borborygmi, and colic, may be removed by one or two drops of Oil of Cajeput on Sugar; by Dioscorein two grains, Ginger four grains, mix for a dose; by Dioscorein, Asclepidin, each, two grains, Ginger four grains, mix for a dose; by small doses of Creosote taken at meal times; or, by the Bisulphite of Soda, taken an hour two after meals, or as soon as the evolution of gas in the stomach begins to be felt. In ordinary cases of flatulency, the Compound Spirits of Lavender will be useful.

For *distress or pain in the region of the stomach*, which many persons experience, the following will be found prompt and efficacious: Take of Aletridin and mix it up with as much Capsicum as will not injure its consistency for forming pills; divide into three grain pills, of which one or two may be taken shortly after each meal; this will likewise be found to remove nausea, and the sinking sensation which some dyspeptics experience in the region of the stomach. If there be considerable irritation of the stomach, the Capsicum must be omitted, and Opium, or Sulphate of Morphia in appropriate quantity added. Occasionally, a pill composed of equal parts of Aletridin, Hydrastin, and Capsicum, will be useful. Or, Assafetida and dried Ox Gall may be made into a pill, by means of a little water, and administered. Equal parts of Hydrastin, Caulophyllin, and Dioscorein, given in doses of six or eight grains, will be useful when the distress is accompanied with, or is owing to flatulency.

Diarrhea, with acidity of the alimentary canal, may be removed by the Compound Syrup of Rhubarb and Potassa, two parts, combined with the Fluid Extract of Wild Cherry, one part; this will also be beneficial in checking *vomiting*; give it in table-spoonful doses every hour or two. If, however, it should not answer in either of these symptoms, equal parts of Laudanum, Chloroform, and Tincture of Wild Cherry may then be given in doses of twenty or thirty drops, every one, two, or three hours.

Water Brash and *headache* will require the same treatment as laid down under their respective heads, which see.

Gastralgia, or a burning pain in the stomach, may generally be removed

by the administration of Trisnitrate of Bismuth ten grains, Lupulin two grains, Sulphate of Quinia half a grain; mix for a dose, to be repeated every four hours. *Spasm* of the stomach will yield to a few drops of Chloroform and Laudanum in some Elm Mucilage, or infusion of Sculleap; or, a teaspoonful of the Compound Tincture of Virginia Snakeroot may be given in a warm infusion of Sculleap, or Ladies-Slipper root. (See Cramp, page 366.) When dyspepsia is complicated with spinal tenderness or pressure, counter-irritation, as dry cupping, firing, stimulating liniments, &c., must be applied to the tender parts. When it is owing to other diseases, as, of the liver, kidneys, womb, &c., these must be treated as the primary affection.

Although remedial measures are frequently necessary in the removal of dyspepsia, yet, they will accomplish very little if a strict hygienic discipline be not attended to; indeed, a proper attention to hygienical rules will often accomplish cures, without the aid of even a particle of medicine. And too much care cannot be taken to impress this on the mind of the patient. In the first place, the skin should be closely attended to; between it and the stomach there are close sympathetic relations, and the healthy or unhealthy condition of the one will exert a corresponding influence upon the healthy or unhealthy condition of the other. It should be bathed every day or two with a weak alkaline solution, and in drying, considerable friction should be used; an occasional shower-bath or cold douche to the spinal column, will be of much importance in some cases. The food should be plain, simple, nutritious, but easy of digestion, and great pains should be taken to *masticate it well before allowing it to enter the stomach*; indeed, I have cured many cases of dyspepsia, by simply placing the patients upon a meat diet, enjoining it upon them not to swallow any food, but to keep chewing each mouthful until it is gone; for when well chewed, the food will pass into the stomach spontaneously. All fats, tough meats, pastries, hot bread, hot biscuit, eggs, soups, puddings, highly seasoned dishes, acids, and all articles which disagree with the stomach, producing uneasiness or flatulence, must positively be avoided. The best meat is the lean of tender beef, cooked rare, but codfish and most kinds of wild game will be admissible where they agree. Tender mutton, venison, the white flesh of chickens and turkeys, raw oysters, roasted, baked, or boiled ripe fruits, mealy potatoes, brown bread, wheat bread, at least one day old, may be used. Hard-boiled eggs, cabbage, lettuce, onions, radishes, turnips, cheese, sweatmeats, tea, coffee, all intoxicating drinks, pickles, dumplings, and sausages, are exceedingly improper. (See articles of diet, page 36.) The best drink is water, and, where it can be used without any unpleasant symptoms, milk may be used. Indeed, as a general rule, the patient should eat what best agrees with his digestive organs, partaking of only a few articles at each meal, and in very moderate quantity, and slowly and thoroughly masticating them. It is best not to use much liquid at a meal, or during the process of digestion. The stomach should never be overloaded at a meal, neither should it be allowed to fast so long as to cause a sense of exhaustion. It is better to make several moderate meals per day, at short intervals, than to make full meals only two or three times a day. The supper should always be light, and taken at least an hour and a half before retiring for the night. As much laughing, cheerful conversation, and liveliness as possible, should be a constant attendant at meals; they assist digestion materially. After exercise of any kind, whether walking or riding, &c., a rest of at least half an hour should be taken previous to eating a meal; and after the meal a rest of about the same period of time should likewise follow before any mild exercise is taken.

Exercise is of great importance, and that kind of exercise should be taken which will call all the muscles of the system into action, without straining or fatiguing them. Walking, running, jumping, dancing, playing ball, football, sawing wood, rowing a boat, &c., are healthful, and should be practised regularly every day, according to the strength and condition of the patient. Traveling is serviceable, likewise a change from the contaminated air of a city to the pure, refreshing atmosphere of the country. Retire to bed early, rise early, improve the morning air on every fine day; avoid late hours, crowded rooms, habits of indolence, dissipation, and fashion. Keep the mind cheerful and pleasantly occupied, driving away care, anxiety, gloom, melancholy, and deep study. Indeed, I may say that the hygienic measures referred to in the Introduction, relative to air, food, mastication, clothing, exercise, sleep, cleanliness, &c., should be strictly followed by the dyspeptic as an important and indispensable part of the curative treatment. I would remark here that where the concentrated preparations above referred to in the medicinal treatment cannot be obtained, the crude articles in powder, or infusion, may be substituted in proper doses.

FLATULENT COLIC.

THE term Colic or Enteralgia, is generally applied to any severe griping pain of the bowels. There have been many varieties admitted by different writers; the chief forms may, however, be divided into: 1. Common or Flatulent Colic; 2. Bilious Colic; and 3. Painter's Colic.

SYMPTOMS. Flatulent or spasmodic colic is a very painful affection, seldom proving fatal, and is very apt to occur in dyspeptic subjects and infants. There is a violent pain in some part of the abdomen, with a sense of twisting or griping about the navel. The pain is severe, but is not increased on pressure, and presents all the character of spasm, by remitting or partially subsiding. There is more or less fulness or distension of the abdomen, and costiveness, with a rumbling noise, nausea, and coldness of the extremities. The pain frequently shifts about in the bowels, and is considerably relieved upon the escape of wind either by the mouth or rectum. The pulse is small, and often unaffected. If not relieved, a severe inflammation of the bowels may ensue.

DISCRIMINATION. Colic may be known from inflammation of the small intestines by the state of the pulse, and by the pain in the former being lessened on pressure, and aggravated in the latter; in colic there is no fever.

CAUSES. A weak or enfeebled condition of the digestive organs disposes one to this form of colic; and it may be excited by crude, indigestible aliment, acid food, wind, over-distension of the stomach by flatulent articles of diet, a redundancy of acid bile, constipation, exposure to cold, &c.

TREATMENT. When colic occurs shortly after a meal, or after eating crude substances, the stomach should be at once evacuated by an emetic, and this followed by a cathartic; but under other circumstances the emetic may be dispensed with. A cathartic should be administered in most cases, and the Compound Powder of Jalap, or, a full dose of Castor Oil with Oil of Turpentine ten drops, and Essence of Peppermint thirty drops, added, may be employed. In severe cases, much benefit will be received, by unloading the lower bowels, with a cathartic injection, similar to that named under Convulsions, on page 358, or under Apoplexy, on page 346.

When the pain is very severe, temporary, and in many instances perma-

nent relief may be obtained by the administration of the Compound Cajepu mixture, or, by a mixture of equal parts of Laudanum, Tincture of Camphor, and Essence of Peppermint, in teaspoonful doses. The stomach and bowels should be rubbed briskly, bathing them often with a mixture of equal parts of Tincture of Capsicum, Tincture of Camphor, and Essence of Peppermint. In many cases, the Compound Tincture of Virginia Snakeroot will be found an effectual internal remedy.

Infants are subject to flatulent colic, which may be occasioned from a retention of the meconium, from a constipated condition of the bowels, from overfeeding, improper diet of the mother or nurse, feeding the infant solid food at too early an age, cold, &c., Its attack is apt to be sudden, occasioning great pain. The cries and screams of the child are constant and agonizing, the bowels are hard and swollen, the limbs are tossed about in various directions, the legs being alternately thrown downward, and then up toward the bowels, and the child is in a constant state of restlessness and agitation. To relieve this condition, an injection must be administered as speedily as possible, composed of a table-spoonful of Castor Oil and a fluidounce of a warm infusion of Peppermint. At the same time some carminative and antacid must be administered internally, as, a warm infusion of Peppermint, in which a minute proportion of Bicarbonate of Soda is dissolved; this may be sweetened with loaf sugar, and administered freely. In some instances, especially when it is required to act upon the bowels, the Compound Syrup of Rhubarb and Potassa, may be given, instead of the above. Should there be a cessation or difficulty in passing urine, an infusion of Spearmint may be substituted for that of the Peppermint.

In violent attacks, in addition to the above measures, the whole body of the infant should be enveloped in hot flannel, and then resting its belly on the nurse's knee, she should *trot* it thus for a considerable time, while she also strikes its back lightly with her hand, keeping up a constant series of strokes along the whole length of the backbone. I have relieved the most violent attacks of colic by this course, where the infant had been suffering and shrieking for several hours, and had been subjected to the baneful and inefficacious influence of hot slings, Paregoric, Godfrey's Cordial, &c. Where attacks of this kind are common to infants, they may be remedied by the use of the following: Take of Pleurisy root, Hops, each, one ounce, Sculleap, Valerian, each, half an ounce, Anise an ounce and a half, boiling water three pints; mix, and digest by a gentle heat for two or three hours, and then sweeten with molasses. The dose is from five drops to a teaspoonful.

Persons who are subject to colic should abstain from all crude, indigestible, and flatulent food, from fermented liquors, and should avoid exposures to cold and damp, keeping the bowels regular, and the stomach free from acidity by the use of some alkaline laxative.

BILIOUS COLIC.

BILIOUS COLIC is often confounded with flatulent colic, but it is a more grave and alarming disease. It is common during summer and autumn, especially in warm and temperate latitudes.

SYMPTOMS. Previous to the manifestation of the positive symptoms of bilious colic, the person generally labors under more or less derangement of the stomach and bowels, as, loss of appetite, bitter taste in the mouth,

constipation, white or yellow fur on the tongue, chilliness, nausea, vomiting, and a sensation of weight or heaviness at the pit of the stomach. As the disease advances, the colic pain comes on, and becomes more and more severe, being of a cutting and screwing character. Sometimes it commences in the neighborhood of the stomach, and extends to the back; at others, it attacks the bowels generally, twisting around the navel as in common colic. This pain is aggravated by pressure. As the disease progresses the fur on the tongue becomes yellow, vomiting of a bilious matter takes place, the bowels are swollen, tender and painful on pressure, obstinate costiveness is present, and febrile symptoms, with great thirst, anxiety, &c. If speedy relief be not obtained, a complete inversion of the peristaltic action of the bowels may ensue, and in violent cases, even the feces have been passed by the mouth.

CAUSES. Bilious colic appears to be a spasmodic or neuralgic affection of the muscular coat of the bowels, which may be brought about by irritating substances in the bowels, vitiated bile, exposures to cold, translation of rheumatic or neuralgic affections, recession of cutaneous eruptions, constipation, &c. If it be left to itself, or be not properly treated, bilious colic may terminate in inflammation, mortification, and death.

PROGNOSIS. When the bowels are moved, with an amelioration of the general symptoms, it augurs favorably; but excessive febrile action, rapid pulse, sallow countenance, great swelling and tenderness of the bowels, with the constipation remaining obstinate, and great uneasiness or restlessness, are unfavorable symptoms. A sudden cessation of pain, cold sweats, a weak, tremulous pulse, faintings, and hiccough, indicate a fatal termination by gangrene.

TREATMENT. An active cathartic injection should be administered as speedily as possible, in order to remove the constipated condition of the bowels; the one I generally prefer is composed of Boneset two ounces, Senna one ounce, water a pint; mix, boil together, and make a very strong decoction. To one pint of this decoction add half a table-spoonful of salt, half a pint of molasses, and a tablespoonful of the Compound Tincture of Lobelia and Capsicum. Give the whole, warm, for an injection, and repeat every fifteen minutes until an operation is produced, and the pain eased. Fomentations of bitter herbs should also be applied over the whole stomach and abdomen, as warm as the patient can bear, and should be frequently renewed; Hops and Stramonium leaves, or Hops and Lobelia, or Hops, Boneset, Wormwood, &c., may be used for this purpose,

Internally, a strong decoction of the Wild Yam root, should be given in tumblerful doses, and repeated every fifteen or thirty minutes; there is no agent that will act so promptly and so permanently as this. Or, three or four grains of Dioscorein may be rubbed up with a little Brandy, and administered for a dose, repeating it every ten or twenty minutes, until relief is obtained; after which, a mild cathartic should be administered, as the Compound Powder of Jalap. In case the Wild Yam cannot be obtained, a strong decoction of equal parts of Sculleap and High Cranberry bark, may be substituted, to each dose of which a teaspoonful of the Compound Tincture of Virginia Snakeroot may be added. To prevent a relapse of the disease, the following should be taken for several days after the attack:—Take of Pleurisy root, Unicorn root, Button Snakeroot, of each, eight ounces, Capsicum four ounces; mix. The dose is a teaspoonful, in sweetened water, to be repeated three times a day. Or, it may be used in decoction. This compound administered every half-hour, has likewise cured an attack of bilious colic.

In the treatment of this disease, perspiration must not be overlooked. All means must be made use of to promote it, as soaking the feet in warm, weak ley water, and warm bricks applied to the limbs and body; and where it can be done, a Spirit vapor bath will prove highly beneficial.

Persons subject to bilious colic should be careful in their diet, keep the bowels in a regular condition, the skin clean and healthy, and avoid all causes which may induce an attack. The following pill used constantly for some months, will effect a permanent removal of the disposition to this disease, if the other hygienic measures be attended to at the same time:—Take Extract of High Cranberry bark, Aletridin, Dioscorein, Capsicum, each equal parts; mix thoroughly together, and divide into pills of four grains each. The dose is one pill, to be repeated three times a day, about one hour after each meal.

PAINTER'S OR LEAD COLIC.

PAINTER'S COLIC, (*Colica Pictorum*,) is a disease caused by lead. Those occupations in which lead is the most used, are the most subject to it; and the more volatile the lead is rendered, the more readily does it affect the system. Painters, plumbers, type-founders, miners, and all who use lead in its various forms, are the persons liable to this affection.

SYMPTOMS. Lead colic comes on gradually, being preceded by a sense of depression or sinking, despondency, disinclination to mental or physical efforts, derangement of the stomach and bowels, scanty and not frequent discharges from the bowels, and an uneasy sensation in the pit of the stomach. This sensation gradually increases until it becomes an excruciating pain, extending downward into the bowels, especially about the navel, and which is described as a severe, twisting pain. Nausea, vomiting, constipation, headache, ineffectual efforts to evacuate the bowels, scanty and often suppressed urine, great thirst, and pains in the wrists and ankles, are generally accompanying symptoms. Nearly all the external muscles are tender to the touch, sometimes so much so that the patient cannot bear the weight of the bedclothes. The twisting pain is not increased by pressure, and exhibits remissions and exacerbations; the bowels are retracted, while their walls are hard and tense, and their muscles contract into hard and irregular lumps or knots; the patient is constantly restless. Paralysis of some part of the system is frequently an accompanying symptom, principally of the muscles of the forearms.

Burton says, that in many instances where lead is absorbed into the system, the edges of the gums attached to the necks of two or more teeth of either jaw, are distinctly bordered by a narrow leaden-blue line, about the twentieth of an inch in diameter; but it is not always present. Pereira detected lead upon the surface of the body by applying to it a wash made of half an ounce of Sulphuret of Potassium dissolved in about three and three-quarter gallons of water; if lead be present, it blackens the solution, or the part to which it is applied.

TREATMENT. The indications are to remove all irritating agents in the bowels, to neutralize the poisonous influence of the lead, and to check vomiting, for which purpose, the following will be found an admirable agent:—Take of Sulphate of Magnesia half a pound, Powdered Alum one ounce, Sulphuric Acid, (pure, without any arsenic in it,) one fluidrachm and a half, boiling water one pint and a half; mix. The dose of this solution is a table-spoonful in a gill of water, and which should be repeated

every hour until it operates freely upon the bowels; to prevent the teeth from being acted upon by the acid, the solution may be sucked through a quill, or glass tube. After it has operated freely, its use should be continued daily for some weeks or months afterward, in doses sufficient to produce one or two evacuations every twenty-four hours. The Sulphuric Acid of the mixture, by uniting with the Oxide of Lead in the system, forms the harmless and insoluble salt, Sulphate of Lead. A decoction of Ground Ivy, (*Nepeta Glechoma*,) used freely, is stated not only to ward off the disease, but to cure it when once developed; it is certainly worth a trial. Malic Acid will also be found a very useful agent in preventing and removing this painful disease; it exists plentifully in the juice of barberries, in apples, currants, and other fruits.

In addition to this, when the pains are very severe, local applications to the abdomen, and injections, the same as those mentioned under Bilious Colic, should be used more or less energetically, according to the urgency of the symptoms.

Alum has been recommended in this disease, thus:—Take of Powdered Alum fifteen grains, Guaiacum ten grains, Aloes three grains; mix for a dose, and repeat every two or three hours.

Persons who work in lead should observe great care not to permit the metal to touch the skin; they should frequently wash their hands and faces, and should always rinse their mouths previous to eating. Once or twice a week, the whole body should be bathed with a weak solution of Sulphuric acid in water. Their food should not be kept in places exposed to lead or its vapors. Their working clothes should never be worn at home, and should be frequently washed; and their heads should be protected by a cap of paper, or other material that will prevent the particles of lead from getting into the hair. A free draught of air should be passing constantly through their working rooms. The diet should be nutritious and hearty, but all intemperance or excesses must be avoided. The bowels must positively be kept regular daily; and the individual may frequently drink diluted Sulphuric Acid sweetened, or the following will be found a very pleasant and useful drink:—Take of Elixir Vitriol half a fluidounce, Tincture of Prickly-Ash berries a fluidounce: mix. A teaspoonful of this may be added to a gill of sweetened water, and taken at a draught; and it may be repeated three or four times a day; or the water may be sweetened with Barberry preserves. Persons should never occupy nor sleep in newly painted houses or rooms, as frequently very unpleasant symptoms are produced therefrom.

WATER BRASH.

WATER Brash, or **Pyrosis**, consists in the discharge of a thin, watery liquid from the stomach, sometimes insipid, and at others extremely acid, and is commonly attended with a sense of burning heat in the region of the stomach. It chiefly attacks persons of middle age, especially females who labor under leucorrhea.

SYMPTOMS. Pyrosis more commonly makes its attack in the morning, or when the stomach is empty. The patient first perceives a pain at the pit of the stomach, with a sense of constriction, as if the stomach was drawn toward the back, and the erect posture is apt to aggravate it. Sometimes the pain is very severe; after it has continued for a certain time, frequently repeated eructations occur, with the ejection of a considerable quantity of thin, watery fluid, either insipid, or very acid, and occasionally of aropy,

tenacious consistence. After a time, the eructations and discharges, as well as the pain, cease. The paroxysm may occur daily, or only occasionally, and the quantity of fluid ejected may vary from a fluidounce to a pint or more. The disease rarely proves fatal, but is frequently a very troublesome one to remove, depending, however, much upon its cause.

CAUSES. Water brash most frequently occurs in anemic and dyspeptic patients; and, when severe, exhausts the system, rendering the person pale, thin, weak, and in bad spirits. A poor, coarse, innutritious diet is a very common cause; insufficient clothing, loss of blood, excessive purgation or emesis, excessive labor, constipation, distressing mental emotions, pregnancy, and all circumstances that exhaust the body, or disorder the functions of the stomach, may give rise to it.

TREATMENT. In ordinary cases of water brash, the following taken every morning, fasting, will be found well calculated to remove it:—Take of the Compound Tincture of Senna, Tincture of Balsam Tolu, each, one fluidounce; mix. The dose is a table-spoonful. In many instances, I have found the following preparation a most effectual one, not only in pyrosis, but also in flatulency, colic, hysteria, depression of spirits, &c.:—Take of Balsam Tolu, Guaiacum, Gum Hemlock, Myrrh, of each, coarsely powdered, two ounces, Oil of Hemlock three fluidounces, Oil of Wintergreen two fluidounces, Alcohol one gallon; mix, and allow them to macerate for two weeks, frequently agitating. The dose is a teaspoonful in half a wineglass of sweetened water; in severe cases, it may be increased.

Among the many agents that have been advised in this affection, are:—
1. Trisnitrate of Bismuth five grains, Sulphate of Morphia one tenth of a grain; mix for a dose. 2. Alcoholic Extract of Nux Vomica one grain, Hydrastin twenty grains; mix and divide into twenty powders, one of which may be given three times a day. 3. Powdered Kino, Alum, Geraniin, each, one grain, Opium half a grain; mix for a dose. 4. The mixture of Guaiacum, Rhubarb, and Charcoal, mentioned on page 400, under the treatment of Dyspepsia, will sometimes be found efficacious, especially when acidity and constipation are present.

Persons laboring under pyrosis, should live on a nutritious diet, should not expose themselves to cold and moisture, and should not exercise to fatigue. The skin should be kept healthy, the bowels regular, and means should be taken to strengthen the stomach. (See Dyspepsia and Chronic Inflammation of the Stomach.) Long fasting must be avoided; it is better to make frequent and light meals, than to permit the stomach to get empty. When anemia is connected with pyrosis, some preparation of Iron must be given, as the Tincture of Muriate of Iron, Citrate of Iron and Quinia, or a pill composed of equal parts of Sulphate of Iron, Capsicum, and Aletridin. Acidity of stomach may be removed by Magnesia, Charcoal, or Carbonate of Ammonia. In very severe cases, the Compound Tar plaster, applied over the pit of the stomach, will generally, in connection with the other measures, afford relief.

There is sometimes vomiting of a fluid of a frothy character, or which soon becomes so after standing for a few hours, and which may be confounded with pyrosis. This fluid has a faint acid odor, and is filled with a torulous or fungous growth, to which the term *sarcina ventriculi* has been applied. It ordinarily consists of minute square, oblong, or even irregular masses, of considerable consistence, composed of four, eight, sixteen, sixty-four, or more, squarish cells, having a slight brownish color, each cell being about the 1.16,000th of an inch in diameter; they somewhat resemble small pockets bound with cords crossing each other at right angles, and their

presence can only be determined by examining a drop of the fluid vomited under the microscope, when they may be usually seen in abundance. It may be attended with pain or distress, as in ordinary pyrosis, and has occurred without either.

When *sarcinæ ventriculi* are present with pain, heartburn, distension of the stomach, disturbed sleep, and loss of flesh, means must be used to prevent the fermentation of the food in the stomach, and to destroy the fungi. For the accomplishment of the first, a drop or two of Creosote, in the form of pill, should be taken at every meal. Or, what is still better, the Sulphite, or Bisulphite of Soda, may be given, in doses of from fifteen grains to a drachm, dissolved in water, and repeated two or three times a day, soon after meals. To destroy the parasitical fungus, vegetable bitter tonics may be given, thus:—Take of Quassia, Unicorn root, Bark of Shrubby Trefoil, each, in powder, three drachms, water twelve fluidounces; mix, and make a strong infusion, to which add from four to six drachms of the Sulphite of Soda, and give a table-spoonful soon after each meal, three times a day. This Sulphite, or Bisulphite, owes its virtues to the fact, that it is decomposed by almost any vegetable acid, or by the hydrochloric acid of the stomach, and that this decomposition liberates sulphurous acid, which has great power to prevent alcoholic and acetous fermentation. The diet should be of the least irritating kind.

Other agents have been recommended to prevent the fermentation, as Salt in doses of from one to four drachms, dissolved in water, and repeated two or three times a day. Or, take of Solution of Chloride of Lime one fluidrachm, water seven fluidrachms; mix. A table-spoonful of this to be taken three times a day, shortly after each meal.

HEARTBURN.

HEARTBURN, or Cardialgia, is a very unpleasant symptom, and is usually owing to excessive acidity of stomach. It is a very common affection among dyspeptics and pregnant women. It may be occasioned by debility of the stomach, fats, high-seasoned food, acids, indigestible substances, liquors, &c.

SYMPTOMS. There is an uneasy sensation at the pit of the stomach, with great heat and burning, sometimes amounting to actual pain, and which frequently extends up into the throat. There may be difficult breathing, vomiting, coldness of the extremities, and great restlessness, and anxiety accompanying it. The fluids vomited are clear, sour, and bitter.

TREATMENT. Temporary relief may be obtained by Chalk, Soda, Magnesia, Lime water, or any other antacid. In some cases, Carbonate of Ammonia will be useful; in others, especially when constipation is present, the Compound Syrup of Rhubarb and Potassa. When there is flatulency, aromatics may be added to the alkalies. If the use of alkalies be persisted in for a considerable time, the tone of the stomach will become injured thereby. Not unfrequently, no benefit will be derived from the use of alkalies, especially among pregnant females; but, on the contrary, acids will prove efficacious, as solutions of Tartaric or Citric Acids, Lemon Juice, Elixir Vitriol, &c.

In all cases of heartburn, in order to prevent its return, means must be taken to strengthen the stomach, for which purpose the following pill may be used:—Take of Sulphate of Quinia twenty grains, Alcoholic Extract of Nux Vomica two grains, Ptelein enough to make the whole into a mass of pilular consistency; mix. Divide into forty pills, and give one for a dose, repeating it three times a day.

A rigid attention must be paid to the diet, which should be light, nourishing and easy of digestion. All articles which become sour or flatulent in the stomach must be avoided. Cleanliness, regularity of bowels, and proper exercise are likewise necessary.

VOMITING.

VOMITING frequently occurs without any manifest cause, and sometimes proves very troublesome. If it be owing to acidity, Magnesia or some antacid may be given to overcome it. If it be owing to constipation, the Compound Powder of Rhubarb and Potassa may be given. If irritability of the stomach cause it, equal parts of Essence of Peppermint, Laudanum, and Tincture of Camphor, may be given in half teaspoonful doses, in an infusion of Spearmint. If it be owing to a depressed condition of the stomach, a few drops of Aqua Ammonia and Tincture of Capsicum in Brandy, will check it. But frequently these will fail, and other means will have to be resorted to, as Soda Powders, Champagne, an infusion of Parched Corn, an infusion of Oat Meal made into a cake with water and then browned like coffee, or a drop or two of Creosote in pill. The patient should be kept in the horizontal position, and in severe cases, will require a Mustard poultice over the pit of the stomach. Sometimes the Trisnitrate of Bismuth five or ten grains, with one-eighth of a grain of Sulphate of Morphia, will answer admirably.

The vomiting produced by the motion of a vessel at sea, called *sea-sickness*, is a very annoying difficulty, and may generally be relieved by the person lying upon his back, remaining perfectly quiet and motionless, and occasionally taking a draught of Brandy, Spirits, or Champagne, being careful, however not to take too much. When the weather is fine, more benefit will be derived by lying upon deck, about the middle of the vessel, instead of in the cabin berth, where there is not a free exposure to the atmosphere. A draught or two of good Cider, with ten or twenty drops of Laudanum to each, will frequently be of service.

For the vomiting of pregnant women, there is no specific remedy; frequently it will continue in spite of all the means employed to check it. Sometimes, alkalies and aromatics combined will be found efficacious; at others vegetable acids, as Lemon juice, a solution of Citric or Tartaric Acid; in some instances, Soda Powders, Seidlitz Powders, and even Champagne taken in the morning, have prevented the vomiting. A piece of toast and a cup of coffee taken by the female while in bed, and immediately followed by sleep of half an hour or an hour, will prevent any nausea or vomiting upon her subsequently arising, in most instances. The bowels should be kept regular, and proper diet used; and in severe cases cohabitation should be prohibited.

JAUNDICE.

JAUNDICE or Icterus is characterized by yellowness of the skin and eyes, whitish or clay-colored stools, and a bilious or saffron-tinted urine, which stains linen a deep yellow color. Bile may readily be detected in the urine by the following methods:—1. Liquor Potassa will dissolve the coloring matter, and render the urine almost transparent. 2. Place a small quantity of the urine on a white plate, and let fall a few drops of Nitric Acid upon it; if bile be present there will be a play of colors, from green to red, violet, and pink.

SYMPTOMS. Jaundice usually commences with a feeling of languor, inactivity, disposition to sleep, loss of appetite, flatulency, and constipation. As it advances, the skin and eyes assume a deep yellow tinge, and which, on dissection of those who die of the disease, pervades the most interior parts of the body; the mouth frequently has a bitterish taste; the tongue is covered with a dirty yellow fur; there is often pain in the head, and almost always a more or less severe pain in the right side, which is increased on pressure; sometimes there is a sense of heat and itching of the skin; nausea and vomiting are not uncommon; the urine is very high-colored; the bowels constipated, with greyish stools, and pulse variable. When the color of the eyes and skin is of a green tinge, it is called *green jaundice*, and when it becomes very dark-colored, it is termed *black jaundice*. It is no uncommon result for the disease in this latter form to terminate in an incurable dropsy, or fatal hemorrhage from some part of the body.

CAUSES. Jaundice may be produced by various causes, as gall stones, viscid bile, tumors pressing on the bile duct, spasm of the gall duct, diseased liver, disease of the heart, and mental emotions. It is frequently brought on by intemperance, an inactive, sedentary life, obstinate costiveness, or anything that may interfere with the regular functions of the liver. It may follow inordinate action of the liver, but is more commonly met with in instances where this organ is torpid and inactive.

PROGNOSIS. Under ordinary circumstances, jaundice is rarely fatal, and when the symptoms gradually subside under treatment, it will be very likely to prove successful. The jaundice occurring during pregnancy, generally disappears after delivery. The unfavorable symptoms of jaundice are, a violent pain in the right side, or pit of the stomach, quick pulse, loss of strength and flesh, dark or livid color of the skin, dropsical swellings of the feet and legs, chilliness, great wakefulness, melancholy, and hiccough.

TREATMENT. In cases of great inactivity of the liver, it will be well to commence the treatment with an emetic, as the Compound Powder of Lobelia. But in most instances this may be dispensed with, and an active cathartic given; for this purpose the Compound Pills, or Powder of Leptandrin, may be given until free catharsis is produced, after which sufficient should be given to produce one or two moderate evacuations daily. However, should the disease be associated with gastro-intestinal irritations as manifested by a frequent pulse, soreness on pressure over the region of the stomach, and red tongue, these active measures will have to be omitted, and the chief reliance placed upon the several measures now about to be named, always, however, keeping the bowels regular.

The skin should be bathed daily with a weak alkaline solution, using considerable friction in drying. In some instances, a bath of vinegar and water, or, very much diluted Nitro-Muriatic Acid, will be found preferable. When there is any tenderness in the region of the liver, stomach, &c., Mustard poultices, and fomentations of bitter herbs, should be applied over the part from time to time, until such tenderness is removed.

In addition to these measures, one of the following preparations must be given, and continued until the disease is cured:—

1. Take of Sheep Laurel leaves, Wild Cherry bark, Prickly Ash bark, and Bloodroot, each, in coarse powder, one ounce, good Cider four pints; mix, and infuse for several hours. The dose is a table-spoonful three or four times a day.

2. Take of Horse-radish root, Bayberry bark, Wild Cherry bark, Golden Seal, each, in coarse powder, one ounce, good Cider four pints; mix, prepare, and administer the same as the preceding.

3. Take of Wild Cherry bark, Sheep Laurel leaves, Barberry bark, and Bitterroot, each, in coarse powder, one ounce, good Cider four pints; mix, prepare, and administer the same as the preceding.

The diet should be plain but nutritious, and composed chiefly of vegetables. Good Cider may be drank several times a day, it forms an useful medicine in this disease; and stewed Barberries, or Barberry preserves, may be advantageously used. Moderate exercise should be taken, when there are no symptoms of irritation or inflammation. Raw eggs are very useful, and may be taken every morning. The patient should by all means resist the tendency to mental and physical inactivity when this is present.

Among the agents recommended for the cure of jaundice are the following:—Take of good hard wood Soot one ounce, Salt, Black Pepper, each, half an ounce, and mix together with the white of two eggs. The dose is half a table-spoonful every morning, the patient drinking an infusion of Wild Cherry bark through the day.

When jaundice is due to biliary concretions or gall stones, the following has been recommended as a solvent:—Take of Sulphuric Ether three parts, Oil of Turpentine two parts; mix. The dose is from half a teaspoonful to a teaspoonful every morning. Care should be used in its administration, as it is apt to cause nausea, and vomiting, and increased pain. One very bad case of jaundice I cured by giving a mixture of equal parts of Leptandrin, Myricin, and Apocynin, in doses of five grains, three times a day, and allowing the patient a tumblerful of Cider, also three times a day. May not Malic Acid prove a valuable agent in this malady?

ASIATIC CHOLERA.

ASIATIC Cholera has been variously termed Epidemic Cholera, Malignant Cholera, Spasmodic Cholera, and Cholera Asphyxia. It is characterized by frequent and violent vomiting and purging, the discharges resembling rice-water, with severe griping, and cramps in the extremities. It is not my intention here to enter into any history of this fatal disease; though I may remark that it prevailed in Asia as far back as 1774, and perhaps earlier, for Bontius mentions a similar disease in 1629. In 1817 it burst out at Jessore, in Bengal, where it was first especially noticed by the profession on account of the great havoc it committed in the British army. From Bengal it spread westward, visiting the various countries of Europe, and in 1832, it crossed the Atlantic, appearing in the month of June, first at Quebec, and from thence throughout Canada and the United States.

SYMPTOMS. Asiatic Cholera is divided into three stages, viz:—The first, forming, incipient, or premonitory stage; the second, confirmed, or active stage; and the third or collapsed stage; to which some writers have added a fourth stage of reaction and convalescence. The *first stage* is characterized by a deranged condition of the digestive organs, a languid feeling and disinclination to mental or physical exertion; a rumbling noise in the bowels, as of wind passing through fluid; there is often pain in the head, or in the knees and loins, with slight spasmodic twitches in the calves of the legs. Frequently there is a feeling of fulness, heaviness, or burning and distress in the bowels; and sometimes griping pains in both the stomach and bowels; the tongue is furred white or yellowish; the appetite is impaired, and the thirst augmented; the pulse varies, being sometimes feeble and contracted, and at others full and strong. As the symptoms progress there will be slight dysenteric or diarrheal discharges, and which may continue several days before

the second stage occurs; and these symptoms have been termed "cholérine" by some writers. During the prevalence of the epidemic but few persons in the affected district escape having one or more of these premonitory symptoms; and it has occasionally happened that symptoms of the above nature have existed during the epidemic, without a subsequent development of malignant cholera; but such cases are very rare. Sometimes costiveness has preceded an attack, and a purgative dose has induced the symptoms of the second stage. More or less nervous disorder is almost always present. There may be a slight feverishness, but more commonly the skin is relaxed and in a state of perspiration, with scanty urine. These symptoms vary very much with different individuals, being very slight, and few in number with some, and more active in others, and may continue for a period varying from one hour to several days. Sometimes the active stage of cholera appears suddenly without any premonitions.

The *second* or *active stage* is marked by more or less constant vomiting and purging of a thin, flocculent, colorless fluid resembling rice-water, with cramps in the legs, which speedily ascend to the bowels and chest. These cramps are very violent and painful, drawing the muscles into firm knots, with twitchings of the muscles throughout the whole body; sometimes the cramps are regular in their attacks, first affecting one set of muscles and then another, twisting the limbs and body in various directions. As this stage advances, the tongue will be found pale and moist, or perhaps covered with a slight white mucus; the pulse gradually becomes frequent and feeble, or may continue full and firm; respiration is hurried, with distress about the heart; there will be a feeling of warmth internally; the thirst will be inordinate; the skin covered with a profuse sweat; the extremities are cool, while the bowels feel quite hot; the urine is scanty or suspended; the countenance expressive of much suffering; a slight approach to duskiness may be observed on the skin, but frequently, in this stage, no discoloration will be observed, except around the nails and under the eyes; but as the disease progresses toward the third stage it becomes of a livid or bluish appearance, yielding, and corrugated; and if no relief is afforded, the patient passes into the third stage.

The symptoms described may be more or less severe, and vary in duration, continuing from one to fourteen hours, unless relieved or removed.

The *third* or *collapsed stage* is one of great prostration, the pulse at the wrist is barely, if at all, perceptible; the skin is cold, and bedewed with a profuse clammy sweat; the face is of a deep blue or purple color, and collapsed; the eyes are sunken; the tongue and inside of the mouth is icy cold; the hands and feet are dark-colored, corrugated, somewhat in appearance like the hands of a washerwoman, and have a doughy, death-like feel, the whole surface of the body assumes a leaden-blue, purple, or brown tint, according to the complexion of the individual, and varying in shade with the intensity of the attack; the voice is weak dry, and nearly gone; the breathing is short and quick, with a laborious action of the chest; a sense of great heat is experienced at the stomach; his cry is incessantly for fresh air, cold water or ice, and he is very restless, throwing himself about in various directions; or he may lie with his eyes partly opened, in a dozing condition, from which he may be readily aroused; the powers of the mind continue unimpaired, although the greatest indifference is manifested to his condition, or to surrounding incidents; the evacuations cease altogether, or they may be spontaneously discharged; the cramps continue, or they may cease until just previous to dissolution. The patient continues in this state for a period varying from an hour or two to twenty-four hours, and

expires; the period of dissolution being announced by a few gasping attempts at breathing.

Occasionally a few patients recover from this collapsed state, which has been termed the *stage of convalescence* or *reaction*. The discharges cease; the surface of the body gradually acquires its natural heat; the skin assumes more of its ordinary appearance; the pulse becomes fuller, stronger, and more natural; respiration is performed with greater ease, and the sense of oppression about the heart abates; the spasms generally cease; the liver and kidneys become more active; and the patient sleeps. On awaking, he may desire some light food, but is so feeble and prostrated, that the slightest error may cause a fatal relapse. Sometimes during convalescence, a secondary fever, or some other difficulty, may set in, and destroy the patient in a longer or shorter time.

Sometimes cholera occurs without any nausea or vomiting, and perhaps no diarrhea; and the cramps have even been absent; but these instances are rare, and when they do happen, are no less dangerous than when the disease is perfectly developed.

CAUSES. The cause of cholera is yet a matter of obscurity; much has been said and advanced in the way of hypothesis, but nothing definite or satisfactory has yet been discovered. One writer attributes the disease to the presence of microscopic animalculæ in the atmosphere, another to a deficiency of electrical power, a third to a scorbutic taint, a fourth to microscopic plants floating in the air, &c. That it depends upon some morbid condition of the atmosphere, there can be no doubt, but the exact nature of this condition remains to be determined. But, although we are ignorant of the true cause of this epidemic, yet, from the close observations of medical men, much has been learned with regard to its exciting causes.

Those places in which cholera has prevailed more extensively, and with great mortality, have been in low, wet districts of country, in the vicinity of marshes, along the low muddy banks of rivers, in countries where the limestone formation occupies the surface, in crowded towns and cities, and low, damp, filthy rooms and cellars. The persons who are most liable to it, are the aged and infirm, those who are debilitated from some previous disease, the intemperate, the ill-fed and uncleanly, and those who reside in damp, cold, dwellings, or in confined and illy ventilated apartments. When persons in easy circumstances have been attacked, it has generally been from one of the following causes: intemperance in eating and drinking; eating improper food, or that which disagrees with the digestive organs; improper use of intoxicating drinks; excessive fatigue; exposure to cold, damp, or night air; too long fasting; the use of limestone or impure water; excessive use of acids; drastic purgatives; late hours at night, and depressing emotions of the mind. One great cause of cholera, and which has undoubtedly been the means of destroying thousands, is fear. Indeed any other causes calculated to depress the nervous system, or derange the constitutional equilibrium, will be very likely to produce cholera in persons exposed to its epidemic influence.

TREATMENT. In the first stage of the disease, before the active symptoms of cholera have become fully developed, I have found the following to answer an admirable purpose: Take of Compound Syrup of Rhubarb and Potassa four fluidounces, Tincture of Prickly-Ash berries one fluidounce, Essence of Peppermint one fluidrachm, Elixir of Paregoric four fluidrachms; mix. The dose is a table-spoonful every half-hour or hour, until it operates gently on the bowels, after which a table-spoonful three or four times a day. In some cases this will not check the progress of the

disease, when the following powder may be given: Take of Camphor, Kino, each, one grain, Opium, Capsicum, each, half a grain; mix for a dose, and give one powder immediately after each evacuation from the bowels, or oftener if the case requires it. Other agents have been used with advantage in this stage of the disease, as, a mixture of Compound Syrup of Rhubarb and Potassa four parts, with Compound Tincture of Virginia Snakeroot one part, of which a table-spoonful may be administered every hour or two. The principal indication is to check the discharge as speedily as possible, and when this is accomplished, the patient should not rise too soon, but should use measures to strengthen the nervous system. One thing should not be forgotten, and that is to empty the stomach by means of an emetic, if the diarrhea occurs soon after a meal. If, at any time, a purgative is demanded, and great care should be taken in determining this matter, I have found the following superior to any other, as being less likely to induce excessive discharges: Take of Compound Powder of Jalap one drachm, Compound Powder of Rhubarb and Potassa, Powdered Prickly Elder bark, each, two drachms, boiling water half a pint; mix, and infuse for ten or fifteen minutes. When cold, give a table-spoonful every hour until it operates. Should the discharges produced by it be too copious or too continuous, exhibit the above astringent powders. A Mustard poultice over the whole abdomen, will always be advantageous. A very effectual remedy in checking diarrhea, is composed of Cinnamon, Cloves, and Resin of Guaiacum, each, in powder, one ounce, good French Brandy one quart; mix. The dose is two teaspoonfuls in hot sweetened water, every fifteen or thirty minutes, until relief is obtained.

In the *second* or *active stage*, the treatment must be active and energetic. To allay the vomiting, the following may be given: Camphor water, Peppermint water, Spearmint water, each, one fluidounce, Elixir Paregoric, two fluidrachms; mix. From a teaspoonful to a table-spoonful may be given every five, ten, or fifteen minutes; and should this not check the nausea or vomiting within a reasonable time, cease its administration, and give the following: Take of Salt, Black Pepper, each, one drachm, Vinegar five fluidrachms, hot water four fluidounces; mix. The dose is a table-spoonful every ten or fifteen minutes. I have known this to arrest vomiting promptly, when all other means had failed. In some very obstinate cases of vomiting, I have found an emetic, followed by the above measures, to be effectual in allaying this symptom. Emetics, however must not be used, when there is too great an exhaustion or prostration of the system.

To check the discharges, a powder, composed of Camphor, Kino, Tannic Acid, each, one grain, and Opium half a grain, may be administered, repeating the dose every half-hour, and lengthening the interval between the doses as the patient mends. But if the discharges are frequent, a powder should be administered immediately after each evacuation from the bowels. And the following injection should also be given after each discharge: Take of Saturated Tincture of Prickly-Ash berries, half a fluidounce, Laudanum twenty drops, water half a fluidounce; mix for an injection. The patient should be urged to retain this in the bowels as long as he possibly can. The great danger exists in the practitioner becoming excited, and changing from one course of treatment to another, without giving any one a proper trial. Be cool, calm, and collected, and do not give up the treatment too soon, always wait a sufficient time for the remedies to act, before changing them, especially when it is known that they are generally efficacious. *During the whole course of cholera, from the first to the last stage, the patient must be kept in a recumbent position, and, if possi-*

ble, a bedpan should be used to receive the discharges, instead of permitting him to rise for the purpose of attending to them. This is a very important point in the treatment, which should never be forgotten; I have frequently seen patients who were recovering from the second stage, doing nicely, have a relapse merely from setting up ten or fifteen minutes.

To remove the cramps common to this stage, the limbs should be held as straight as possible, and the affected muscles should be rubbed briskly, either with the hands alone, or by means of warm flannel. The Tincture of Capsicum should be well rubbed along the whole course of the spinal column, after which a Mustard poultice should be applied; Mustard may also be placed on the feet, ancles, thighs, and wrists. Heated stones, bricks, irons, bottles of hot water, small bags filled with hot sand, bran, or salt, should be applied to the hands, arms, thighs, legs, and feet, as well as on each side of the body; and cloths wet with water as hot as the patient can bear, must be placed upon the abdomen, renewing them every few minutes. The production of full, free, and copious perspiration, will be found a very important indication to be fulfilled in the treatment. In some cases where there is no great irritability of stomach, the Compound Cajeput Mixture, given every ten or twenty minutes, in half-teaspoonful doses, in a sweetened mixture of hot brandy and water, will be found peculiarly applicable; at the same time, the parts affected with cramps may be thoroughly rubbed with the same Mixture.

In cases where there is much internal congestion, or a great determination to the head, dry cupping along each side of the spinal column from the occiput to the coccyx, followed by the application of Mustard poultices, will be found very advantageous.

The excessive thirst, common to the second and third stages, may be relieved by table-spoonful doses of cold Gum Arabic water, or iced water; but the best agent to allay this symptom is ice, which may be held in the mouth, and small pieces of it be occasionally swallowed.

In the *third* or *collapsed stage*, but little more can be done, except to pursue the measures recommended above with increased energy; for, although the patient is now in a hopeless condition, there is a possibility of recovery; and success has frequently crowned the efforts of those who have energetically and unremittingly continued their treatment. It will be found of great advantage to envelope the patient in blankets wet with water as hot as can be borne, giving internally, at the same time, for a stimulant, a mixture of one part of Tincture of Camphor, and three of Tincture of Prickly-Ash berries, of which from a teaspoonful to a table-spoonful may be given every ten or twenty minutes, in a small quantity of water; these may be added to the means above advised for the treatment of the second stage. In some cases of collapse, large doses of brandy, say a gill at a dose, and renewed in a short time, have been followed by a restoration to health; this, however, will be inapplicable to patients with excessively irritable stomachs.

I would remark here, that in ten or twelve cases of cholera in 1849—50, I made use of the Tincture of Muriate of Iron, in the second stage of the disease, with the happiest results; thirty drops, added to half a gill of iced water, was given for a dose, and repeated immediately after each attack of vomiting. This was used in connection with the injections and external measures above mentioned.

After a recovery from cholera, great care should be observed during the stage of convalescence. The liver will frequently be left in a very torpid condition, with a constipated state of the bowels. A Mustard poultice placed over the region of the liver, and the careful administration of the purgative mentioned in the first part of the treatment composed of Compound Powder

of Jalap, Compound Powder of Rhubarb and Potassa, and Powdered Prickly Elder, will overcome this condition ; but the practitioner cannot be too observant that he does not cause large evacuations by the medicine. The diet must also be properly regulated, because the least imprudence or inattention may bring on a relapse which almost invariably proves fatal. When there is much exhaustion of the system, mild stimulants, and stimulating tonics may be given, with a light, nutritious, and very easily digestible diet.

During epidemics of Asiatic Cholera, we find that it has been the most destructive in its ravages among those who live in damp and filthy places ; hence, the necessity of cleanliness in every part of a house, as well as in the person. All dwellings should be cleansed from top to bottom ; all filthy or putrid accumulations should be at once removed ; the rooms should be well aired every clear day ; and places of damp and disagreeable odor should have their atmosphere purified by lime, chloride of lime and other antiseptics. The body of every individual should be thoroughly washed and dried, at least once in every three or four days. Persons residing in a cholera atmosphere should avoid long fasting, excessive fatigue, exposures to wet and cold, especially at night, intemperance in food, and, more particularly, should intoxication be avoided. As a general rule all green fruits must be dispensed with, also fats, indigestible articles, as, pickles, nuts, &c., and whatever is found to disagree with the stomach. With these exceptions no other change is required in the diet to which one is generally accustomed ; this should be of a nourishing character,—and well-cooked vegetables, or the moderate use of ripe or preserved fruits, are not objectionable when they agree with the stomach. The clothing should be warm ; regular and sufficient sleep should be had ; any sudden changes in the way of living or in the general habits of a person should be avoided ; and on the first appearance of looseness of the bowels, or other derangement of the alimentary canal, the proper measures should be immediately taken, without a moment's delay. Persons who are prone to fear should use all means to avoid this emotion, as it has, undoubtedly, produced more diarrhea and death by cholera, than any other single cause ; the mind should be kept patient, cheerful, and submissive, and constantly occupied with its regular duties. In seasons of cholera the proper officers of a city, town, village, &c., should, under the direction of an intelligent Board of Health, adopt and enforce the most stringent laws for the preservation of their community from this, or any other, uncommonly destructive disease. Good fermented cider has been named, not only as a preventive of cholera, but as a remedial agent ; according to observations which have been made by several physicians, those who used fermented cider were less liable to an attack of cholera, and more readily recovered from it when attacked, than others.

CHOLERA MORBUS.

CHOLERA MORBUS is a disease common in warm seasons, and especially in warm climates. The principal features of the disease are, vomiting, purging, and severe griping pains in the abdomen.

SYMPTOMS. The disease is occasionally preceded by chills, headache, giddiness, and a numb sensation of the limbs ; but more generally its attack is sudden, commencing with nausea and distress at the stomach, succeeded by violent gripings in the bowels ; these are followed by frequent vomitings of a thin, dirty-yellowish, whitish, greenish or even colorless fluid, with discharges from the bowels of a similar character to that vomited, and which

occur as frequently as the vomitings. During the intervals between the vomiting and purging, there is much nausea and uneasiness at the stomach; but, in some cases, a sensation of relief is afforded, and the patient lies in bed much fatigued and apparently free from any distress. These attacks of vomiting and purging usually take place every ten or twenty minutes, being either concurrent, or the one evacuation being immediately followed by the other. Sometimes the pain is so severe as to cause the patient to be drawn up, and even to cry aloud. Generally there is great thirst, but as soon as any fluid is swallowed it is at once ejected; the tongue is dry; the urine high-colored, deficient, or suppressed; and the pulse rapid, soon becoming small and feeble. If the disease is allowed to progress unchecked, the pulse sinks, the extremities become cold, the countenance pale and indicative of much suffering, the respiration hurried, cramps in the limbs, hiccup, a cold, clammy sweat breaks out, great prostration, and death. The disease frequently proves fatal in twenty-four hours, and when malignant, even in a few hours; sometimes it subsides spontaneously.

Sometimes patients with cholera morbus complain of a great burning sensation internally; and in the more malignant forms of the disease it is not uncommon for the discharges in the last stage to resemble the "rice-water" evacuations of Asiatic Cholera.

Cholera morbus may be known from diarrhea and dysentery, by the character of the discharges from the bowels, which are purely of a bilious nature, not mixed with blood or mucus, and with scarcely any fecal matter.

CAUSES. Cholera morbus is owing to an irritation of the stomach and bowels, with a greater or less derangement of the functions of the liver, and which is ordinarily caused by improper substances taken into the stomach, as unripe fruits, acids, much fat food, certain species of fish, lobsters, unfermented cider, improper use of alcoholic drinks, or any articles that will irritate the mucous membrane of the stomach and bowels, by undergoing an acid fermentation. It may also be produced by exposures to sudden changes; by sitting in a draught of cool air while in a state of perspiration; by excessive heat, rendering the bile more acrid, or secreted in preternatural quantity; or by malarial influences. Persons of gross habits, or intemperate in eating and drinking, and those of sedentary habits, are the most subject to it.

PROGNOSIS. When the symptoms gradually improve, vomiting ceasing or becoming less frequent and distressing, with a gentle moisture upon the surface, succeeded by sleep, they augur favorably. But frequent and severe vomitings, with great prostration of strength, swelling of the bowels, intermittent pulse, cold, clammy sweats, short, hurried breathing, constant hiccup, spasms of the extremities, or convulsions, are unfavorable symptoms.

TREATMENT. In the early stage of the disease, when the contents of the stomach are not thoroughly evacuated, it will be proper to give freely of warm water, or warm infusion of Catnip, or of Boneset, to aid in producing free vomiting, that the stomach may be completely emptied. After this has been accomplished, should the vomiting still continue, a large Mustard poultice may be placed over the region of the stomach and bowels, and the Compound Syrup of Rhubarb and Potassa be given in doses of a table-spoonful, repeated every half hour. The first doses will frequently be vomited up for several times in succession,—in such cases, immediately repeat the dose, and continue thus until it does remain on the stomach; in very severe cases of vomiting, ten or fifteen drops of Laudanum may be added to each dose until it is checked. The patient must remain very quiet, and if he be very thirsty, a small lump of ice may be allowed to dissolve in his mouth; or, a teaspoonful of an infusion of Peppermint or Spearmint may be given

occasionally,—but too large a quantity of any fluid will excite vomiting. Nothing should be taken into the stomach unless it is absolutely necessary.

After the vomiting has been checked, the intervals between the doses of the Compound Syrup of Rhubarb and Potassa, may be increased to one, two, or three hours, according to the urgency of the case, and should be continued as long as there is any looseness of the bowels.

When the pains in the bowels are severe, or there are cramps in the limbs, a course similar to that named for these symptoms in Asiatic Cholera, page 416 may be pursued, viz:—hot fomentations to the bowels, and frictions to the limbs with some stimulating mixture; the following will be found a useful stimulant:—Take of Tincture of Capsicum, Tincture of Camphor, Essence of Peppermint, each, equal parts; mix, and apply with considerable friction. Injections will likewise be found very useful, when there is great pain in the bowels; one composed of Mucilage of Elm or Starch water, two fluidounces, and Laudanum twenty drops, will be efficacious.

I have in a few cases checked the vomiting in cholera morbus, as well as the more distressing symptoms, by the administration of a mixture of Bisulphite of Soda two drachms, water one and a half fluidounces, Laudanum one fluidrachm, to be given in teaspoonful doses every ten or fifteen minutes, until the desired effect is produced. After which give the Compound Syrup of Rhubarb and Potassa in table-spoonful doses, repeating it four times a day until it acts upon the bowels.

When the disease is owing to malarial influences, occurring periodically, it should be treated the same as just named, while the active symptoms of cholera morbus are present; but, during the intermission, some one of the antiperiodics named on page 190, under the treatment of Intermittent Fever, should be persistently employed until the tendency to the periodical attacks is overcome.

During convalescence the patient should be very careful in his diet; using light, digestible, nourishing food, abstaining from all articles which are indigestible or disposed to acidify on the stomach. He should keep himself warm, guard against night air, and exposures to cold and damp, and be careful to avoid all kinds of intemperance. Oatmeal made into a cake with water, baked, then browned like coffee, and made into a coffee-like infusion, is not only useful in allaying the distress and vomiting, but is also nourishing.

MILK SICKNESS.

MILK SICKNESS, or Sick Stomach, is a disease sometimes met with in the Western States, and which has, in most instances, proved fatal. The cause of this disease is not known, though it is supposed to originate from some poison eaten by cows, which is communicated to the milk and butter. The cattle that are affected with this poison, whatever it may be, tremble, stagger, and soon die; and any animal preying upon their flesh becomes likewise poisoned. The milk, the butter, the cheese, or the meat of an animal having this disease, is certain to communicate it to those who eat of them, although these articles present no appearances by which they may be detected from healthy ones.

SYMPTOMS. Soon after partaking of the poisoned article of diet, the person experiences a sensation of languor and lassitude, or extreme debility, especially in the lower extremities; the appetite becomes impaired, there is a disagreeable, sickening sensation at the stomach, and a peculiar offensive breath, readily recognized by any one conversant with the disease. These

symptoms, with an occasional vomiting, may exist for several weeks, without any others being manifested. Again, they may gradually increase in severity, being followed by extreme loathing, nausea, and vomiting, or distressed retching to vomit; the vomiting occurs every half-hour, or hour, and sometimes oftener, and the patient usually experiences some relief after each effort. The liquid ejected is very acrid and possesses a singular acid odor, and seems to be little else than the drinks taken, mixed probably with the fluids of the stomach; in severe cases, a dark-colored, flaky substance, is mixed with the ejected material. Sometimes the attack comes on suddenly, with severe vomiting, thirst, &c.

In connection with the characteristic symptoms above described, there will be a sense of great oppression about the heart, anxiety, deep respiration, a burning sensation in the region of the stomach, likened to boiling water, great thirst, violent palpitation of the heart, troublesome hiccough, hot belchings, and obstinate costiveness. The tongue is slightly coated and swollen, the skin cold and clammy, there is, in most cases, a strong pulsation over the abdomen, especially at the right of the navel, and vertigo, pain in the head, ringing in the ears, and even delirium are frequently present. In the fatal cases there is dilatation of the pupils, stupor during the intervals between vomiting, and the fluids ejected are of a dark color.

TREATMENT. To overcome the irritable condition of the stomach, and check the vomiting, the Compound Powder of Rhubarb and Potassa should be given every half-hour or hour, according to the severity of the case, in table-spoonful doses; and at the same time a large Mustard poultice should be placed over the region of the stomach and liver, and in severe cases to the feet, wrists, and along the whole course of the spinal column. The application of some stimulating tincture or liniment to the whole surface of the body and limbs, with considerable friction, will be found of great advantage, especially in those cases where the surface is cold. As soon as the nausea and vomiting have subsided, an active cathartic dose of the Compound Powder of Jalap should be given, the action of which will always be followed by great relief. And if necessary, this course should be repeated until a complete cure is effected, giving the cathartic daily during the continuance of the disease.

In those cases where the vomiting is very obstinate, stimulating injections should be employed, and as soon as thorough evacuations have been procured the vomiting will generally subside. A good injection for this purpose is the one named on page 346, under the treatment of Apoplexy. To allay the excessive thirst, the patient may hold a small piece of ice in his mouth, or may even swallow some small pieces, but on no account must he be allowed water, as it will be at once vomited up. An infusion of Water-pepper has been highly recommended in this disease; it may be tried as a drink, and allowed if found to be beneficial. Perhaps a solution of the Sulphite of Soda, as named on page 419, under the treatment of Cholera Morbus, may be found efficacious in allaying the vomiting. I am not aware that any of our physicians have examined the character of the ejected fluid in this disease, under the microscope,—it is very desirable that this should be done.

The stomach should not be overloaded with any food or drink whatever during the treatment,—if diet be required, it should be of the mildest and least irritating nature, as thin Indian meal gruel, barley-water, toast-water, rice-water, &c.

DIARRHEA.

DIARRHEA, or Looseness of the Bowels, is a disease of frequent occurrence, manifesting itself more especially during the warm months of the year, though it may take place at any season. All persons are alike subject to it, when exposed to the causes.

SYMPTOMS. Diarrhea consists in frequent evacuations from the bowels, of a more fluid nature than usual, each discharge being preceded by a rumbling noise in the bowels, together with a sense of weight or pressing down, and considerable uneasiness in the lower part of the bowels, which sensations are relieved as soon as the evacuation takes place, but are renewed before the one which is to succeed ensues. More or less griping is present, and not unfrequently nausea and vomiting. Fever and tenesmus are not present in diarrhea. When the discharges are very frequent, or in large quantity, they rapidly reduce the strength of the system; emaciation takes place; the functions of the system become impaired; the skin becomes pale, dry, rigid, and eventually sallow; and if the disease continues for any length of time, the feet and legs become dropsical. The discharges become more and more offensive, a slow fever ensues, and the patient dies in a state of great exhaustion.

According to the character of the evacuations, and the exciting causes, diarrhea has been divided into several varieties, thus:—

1. *Lienteric Diarrhea*, in which the food is rapidly passed into the intestines, and appears in an undigested condition in the evacuations, and is due to an impairment or suspension of the functions of the stomach, with great irritation in the intestinal canal.

2. *Chylous, or Coeliac Diarrhea*, in which the discharges are of a milky white or dirty white color, and is due either to a congested condition of the mucous membrane of the small intestines, or to tubercular disease of the mesenteric glands.

3. *Mucous Diarrhea*, in which considerable mucus is found in the discharges, being occasionally slightly streaked with blood.

4. *Bilious Diarrhea*, in which the evacuations are mixed with much yellowish, or greenish looking bile, are very copious, and most generally accompanied with nausea and vomiting.

5. *Feculent Diarrhea*, in which the feces are more liquid than natural, and voided in greater quantity.

The diarrhea attending inflammatory conditions, or the latter stages of disease, is considered under the various diseases in which it may occur.

CAUSES. Diarrhea may be caused by improper exposures to excessive heat or cold, by the use of acid, unripe, indigestible, or other irritating food, from the presence of worms, from overloading the stomach with food, sudden frights, &c.; certain articles of diet or drink occasion diarrhea with some persons, which are quite agreeable and salutary to others. A very frequent cause of diarrhea among suckling infants, is the use of spoon-meats, and other gross articles of diet; it may also arise from a bad quality of the nurse's milk, from the irritation caused by teething, &c. Mental depression, recession of cutaneous eruptions, fermented liquors, &c., are also among the exciting causes.

TREATMENT. In the treatment of these various forms of diarrhea, there is no better agent to neutralize excess of acid, restore the bile to a healthy condition, remove flatulence, and unhealthy accumulations in the bowels, and allay irritation and strengthen the stomach and bowels, than the Compound Syrup of Rhubarb and Potassa; a table-spoonful of which may be

given every hour until it acts upon the bowels, changing the consistence and appearance of the discharges; after which it may be repeated every two, three, or four hours, as required. I frequently prescribe it thus:—Take of the Compound Syrup of Rhubarb and Potassa four fluidounces, Essence of Peppermint one fluidrachm, Paregoric four fluidrachms; dose as above.

The unpleasant weight and distress in the lower part of the bowels, may be overcome by injections of half a teaspoonful of the Compound Tincture of Virginia Snakeroot, mixed with a table-spoonful of water, and injected into the bowels immediately after each evacuation; being retained as long as possible. Nausea or vomiting is occasionally present, and when severe, will require the application of a Mustard poultice over the region of the stomach, together with a few drops of Laudanum or Paregoric to each dose of the above named Compound Syrup. Vomiting, both in this disease and in cholera morbus, when severe, has been frequently checked in a short time by the following:—Make a cake of Oatmeal and water, bake it, brown it like coffee, then powder it, and make an infusion. Of this oatmeal coffee or infusion, the patient may drink freely.

When there is any pain or griping, an injection may be given composed of Castor Oil one gill, molasses, warm water, of each half a pint, Laudanum from twenty to sixty drops; mix. This may be repeated as often as the circumstances of the case require. When the pains are severe, warm fomentations of bitter herbs, as Hops, Tansy, Wormwood, &c., should be applied over the bowels. In all cases of diarrhea, it is of importance that the functions of the skin be attended to; the alkaline bath should be applied to the surface, drying with considerable friction. In some cases, especially when caused by exposures to cold or damp, the production of perspiration by the Spirit vapor bath will be found highly beneficial. If the patient be anemic, or the blood in an impoverished condition, the Tincture of Muriate of Iron, will be found a most excellent agent; it may be given in doses of ten drops every hour, in a wineglassful of water.

I have frequently met with a form of diarrhea, occurring in malarious districts, or during certain epidemics, in which there is a constant, dull, heavy, or sore sensation in the neighborhood of the navel, amounting to a cutting or griping pain just before an evacuation from the bowels, with debility, loss of appetite, and great restlessness; the discharges will be copious, but not exceeding four or five in the course of twenty-four hours. I have invariably cured this by the following powder:—Take of Leptandrin eighteen grains, Camphor, Ipecacuanha, each, four grains, Sulphate of Quinia six grains; mix, and divide into twelve powders, of which three or four must be taken in the course of the twenty-four hours, continuing their use for several days in succession. Others have met with success by the administration of a powder composed of Powdered Catechu ten grains, Powdered Opium half a grain or a grain, Sulphate of Quinia two grains; mix for a dose, and repeat it two or three times a day.

The diet during diarrhea may consist of barley-water, rice-water, Gum Arabic water, infusion of Elm bark, Iceland, or Irish moss, Arrowroot, Sago, or Tapioca, with or without boiled milk, and toast-water. Well-boiled rice, flavored with powdered Cinnamon, is one of the most digestible aliments, and is, therefore, very appropriate; or boiled milk with Cinnamon powder may be used. Fats, all acids, juicy vegetables, and unripe fruits must be proscribed. Brandy-water, made weak, sweetened with loaf sugar, and flavored with grated nutmeg, will be found very acceptable and useful. Ale, porter, and beer must not be used. As soon as the appetite returns, animal food, as the tender part of the sirloin of beef, or boiled mutton or chicken,

are more appropriate, and will be more readily digested than strong soups, which are exceedingly improper. The diarrhea which persons from the East experience from drinking the Western waters, may be overcome by eating freely of boiled rice, and adding a small quantity of good French brandy to the water drank.

CHRONIC DIARRHEA.

AFTER existing for some time in the acute form, and particularly if the treatment pursued is not correct, diarrhea often becomes chronic in its character, being sometimes very obstinate. The discharges continue frequent, with more or less pain or griping, restlessness, thirst, peevishness, impaired appetite, debility, emaciation, &c. The skin becomes rough, dry, and of a sallow hue, the tongue is dry, and of a dark color, and, frequently, whatever is taken into the stomach is passed in the evacuations imperfectly digested. This disease is generally owing to a morbid condition of the liver; or, to a chronic inflammation of the bowels.

TREATMENT. In the treatment of chronic diarrhea, after having exhibited the Compound Syrup of Rhubarb and Potassa, until it has operated on the bowels, it will be proper to administer astringents, as infusions of Blackberry root, Geranium, Bethroot, &c. The following will be found a very excellent remedy: Take of Leptandrin, Geraniin, Myricin, each, twelve grains; mix, divide into twelve powders, and give one for a dose, repeating it three or four times a day. In some cases the Tincture of Muriate of Iron in doses of twenty drops in a gill of water, repeated three or four times a day, and persisted in for some time, will effect a permanent cure. Astringent injections will frequently prove serviceable, especially when there are griping pains or tenesmus; five or ten grains of Tannic Acid, dissolved in a fluidounce of water, to which half a teaspoonful of the Compound Tincture of Virginia Snakeroot, is added, may be injected into the bowels, and be repeated several times a day, according to the severity of the case. The patient should be requested to retain the injection as long as possible, each time. The skin must be attended to, bathing it frequently, with frictions in drying. When the diarrhea is owing to a chronic inflammation of the intestines, it must be treated as named under this affection on page 287. The diet must be the same as in the preceding instance of ordinary diarrhea.

Several agents have been successfully used in the treatment of chronic diarrhea, among which may be named the following:

1. Take of Powdered Catechu ten grains, Opium one grain, Sulphate of Quinia two grains; mix for a dose. Two or three of these powders may be taken per day; and they will also be found useful in the diarrhea of malarial districts.

2. Take of powdered Alum, powdered Galls, each, two grains, pulverized Camphor one grain; mix for a dose. One powder to be taken immediately after each stool.

3. Take of Leptandrin, Geraniin, Kino, Camphor, each twelve grains; mix, and divide into twelve powders. One of these is a dose to be repeated three or four times a day.

SUMMER COMPLAINT OF CHILDREN.

SUMMER Complaint of Children, also known by the name "Cholera Infantum," is a very common and fatal disease peculiar to infants during the

warm summer and autumnal months; it is more commonly met with among those who are teething.

SYMPTOMS. The disease commences gradually with a looseness of the bowels, which may continue for several days before there is an evident derangement of the bowels; frequently, however, nausea, vomiting, and purging, with more or less fever, exist from the first. The discharges from the bowels may be inodorous, or have a sour smell, but more commonly they are very offensive; they vary in color, being greenish or yellowish at first, and frequently mixed with mucus and blood; or, the food eaten may pass away imperfectly digested; and, in severe cases, the evacuations become clear and watery. The child is restless and fretful, constantly changing its position, frequently drawing up its feet and legs, and crying out most vehemently, or in piercing screams. The pain which it suffers appears to be of a spasmodic character, very much like that of cholera morbus in the adult. In many cases the looseness will continue without much, if any, pain or vomiting. The pulse is quick, small, and somewhat tense; the thirst excessive, and any fluid taken to assuage it is at once ejected; the tongue has a slight white fur at first, but gradually becomes bright, dry, and glossy; the skin is usually dry, harsh, and shrivelled; and the head and body are preternaturally warm, while the extremities are cold. The fever is of the remitting kind, and becomes aggravated toward evening. The abdomen is frequently swollen and tense, and sometimes there is a swelling of the face and limbs. Not unfrequently delirium occurs, as known by a forcible throwing or jerking of the head, wild semblance of the eyes, endeavors to bite or scratch, &c. Emaciation takes place rapidly, the face becomes very pale and contracted, the lips thin, dry, and wrinkled, the eyes dull and sunken, and half-closed when asleep, the child being more or less insensible to external impressions, and death may occur in six hours; though the disease may continue for many months before it proves fatal. When the disease assumes a chronic form the child becomes reduced to almost a skeleton, the skin acquires a dark-brown tinge, with livid spots, the mouth becomes affected with aphthous ulcerations, and the discharges from the bowels are extremely acrid and fetid, excoriating the parts. The abdomen is either swollen or sunken; worms are frequently discharged; hiccough, or convulsions, and death; sometimes dropsy in the head ensues, which eventually destroys the little sufferer.

CAUSES. Cholera Infantum is seldom met with in country places, but is very common in cities where the air is impure, and especially among the children of those who are uncleanly in their persons and dwellings, who reside in damp or otherwise unhealthy locations, and who use improper or innutritious diet. It may be caused by excessive heat, inattention to cleanliness, exposure to cold and damp, impure atmosphere, and defective diet. It is more apt to occur during the period of teething, which process appears to be an exciting cause. Worms are likewise said to be an exciting cause.

TREATMENT. The best and most effectual agent that can be used in the treatment of this affection, is the Compound Syrup of Rhubarb and Potassa, which neutralizes any acidity of the alimentary canal, removes fetid and morbid accumulations, and strengthens the stomach and bowels. It may be given in doses of one or two teaspoonfuls, every half-hour, until it operates on the bowels, after which repeat the dose three, four, or five times a day. The addition of one part of the Tincture of Prickly-Ash berries to three parts of the above Syrup, will be found very useful. To assuage the inordinate thirst, the child may freely drink of a cold infusion of Wild Cherry and Elm barks, each, an equal quantity; but this should not be given until the vomiting has been checked; a few leaves of the *Benne Plant*, (*Sesamum*

Oriente,) stirred in about two gills of cool water, soon renders the latter quite mucilaginous, forming a tasteless, demulcent draught, which may be used as a substitute for the one preceding.

In severe cases of vomiting, a Mustard poultice applied along the whole course of the spinal column, and one over the region of the stomach, in addition to the internal measures, will prove very efficacious. Injections are always proper to allay vomiting, pain, and tenesmus, and fomentations to the abdomen will likewise prove effectual in removing gripings and spasmodic pains. The injection may be composed of Elm or Starch water one fluid-ounce, Tincture of Prickly-Ash berries two fluidrachms, Compound Tincture of Virginia Snakeroot five or ten drops; mix, and use one-half for a child about a year old. The skin should be bathed at least once a day, with a weak alkaline solution, to which some spirits has been added, drying with a gentle degree of friction.

When the disease proves obstinate, I have succeeded in effecting its removal by the following compound: Take of Swamp Milkweed, Colombo, Rhubarb, Prickly-Ash berries, each, bruised, half an ounce, Brandy two pints; mix, and macerate for ten or twelve days. A child two years old may take half a teaspoonful for a dose, in some sweetened water, repeating it three or four times a day. In some very obstinate cases I have permanently cured them by administering a mixture of Leptandrin two parts, Sulphate of Quinia one part, in doses suited to the child's age, say one grain of the mixture to a child a year old, and repeated every two or three hours; in conjunction with this, the Worm Cordial, named under the treatment of worms, was used three times a day. Sometimes in obstinate cases, astringents will be found advantageous, after a proper evacuation of the bowels by the above Compound Syrup of Rhubarb and Potassa; infusions of Geranium, Blackberry root, Dewberry root, Wild Cherry bark, Bethroot, &c., may be used. Kino, in powder, has likewise proved beneficial in the advanced stages; the following has been very highly recommended: Take of Extract of Logwood, Ammoniated Tincture of Opium, each, two drachms, Tincture of Catechu three fluidrachms, Compound Spirits of Lavender one fluidrachm, Simple Syrup, Boiling Water, each, four fluidounces; dissolve the extract in boiling water, and add the other articles. The dose is a teaspoonful to a child a year old, repeating it every three or four hours.

If it can be done, the child should be at once removed to some healthy location in the country, where it can have the benefit of pure, cool air; or, if this cannot be done, it should be frequently taken out in the open air, avoiding a heated, confined air as much as possible; sailing in an open boat will be found serviceable. The body should be kept clean, and the clothing should be changed frequently; the child's apartment, as well as its bed-clothing, should be thoroughly aired every day; and all improper food should be avoided. Mucilaginous drinks, Gum Arabic water, and boiled milk with powdered Cinnamon added, and which may be thickened with wheat or rice flour, will be the most appropriate diet.

CONSTIPATION.

By Constipation or Costiveness is meant a partial or complete retention of the feces, they being hard, dry, and in diminished quantity when passed, and voided with difficulty or much straining, and sometimes with pain. It may occur as a constitutional condition, but is more frequently symptomatic of some disease or impropriety. Sometimes nausea, want of appetite, flatulency,

headache, dizziness, and feverish symptoms accompany it. All persons should use every means to avoid or overcome a costive condition of the bowels, especially pregnant women, plethoric individuals, and those disposed to apoplexy, epilepsy, chorea, hysteria, bilious colic, &c. A want of attention to the regular periods for evacuating the bowels, the use of opium, astringents, and some kinds of diet will give rise to constipation, and whenever any article is found to produce this effect, it should be strictly avoided. When it is owing to disease, this must of course be cured before any permanent benefit can be expected.

TREATMENT. In ordinary cases, the means named on page 151 will be sufficient; but when medicines are actually required, I more commonly employ a mixture of Rhubarb two parts, Bicarbonate of Potassa one part, of which from two to twelve grains must be given three times a day, in a little water, about an hour after each meal. The doses must be sufficiently large to produce one evacuation daily, resembling in quantity and consistence as nearly as possible, those of healthy discharges; on no account should these evacuations exceed two per day. In all diseases requiring regularity of the bowels, I make use of this preparation, when it agrees with the patient, not causing gripings, &c. Sometimes, however, this powder will not have the desired effect, unless it be given in large doses, when other remedies will become necessary, as:—Take of Aletridin twenty grains, Extract of Nux Vomica one or two grains, Podophyllin five grains; mix, and divide into twenty pills, one or two of which may be taken every night. Or, the following may be used:—Take of Tincture of Mandrake, Tincture of Blue Flag, each, five and a half fluidrachms, Saturated Tincture of Nux Vomica two and a half drachms; mix. The dose is ten or twelve drops, three times a day. Or, the Compound Pills, or Compound Powder of Leptandrin, may be used. A very good pill for obstinate constipation, is composed of Podophyllin, Apocynin, each, one drachm, Leptandrin three drachms, Alcoholic Extract of Nux Vomica twelve grains, Castile Soap a sufficient quantity to make the whole into a pill-mass; divide into three grain pills, of which one may be taken every night, or every other night. It must be remembered that the use of purgatives creates a necessity for their repetition, which impairs the energy of the bowels,—consequently, it is better in all cases to solicit natural evacuations, than to become habituated to cathartic medicines. Constipation during pregnancy, may be overcome by the use of the Rhubarb and Potassa powder above named, or by injections of some vegetable bitter infusion, as of Boneset, with the addition of Molasses; and the diet should consist of stewed fruits, prunes, figs, mush and molasses, brown bread, dates, ripe fruits, Indian meal gruel, &c.

Constipation in infants, may generally be overcome by the introduction of a piece of Soap into the rectum, as ordinarily used by nurses; if this does not answer, a strong infusion of Leptandra, (Blackroot,) to which about one-third of its measure of Molasses has been added, may be administered in doses of from ten drops to a teaspoonful, depending upon the age of the infant, repeating the dose every three or four hours; and this should be exhibited daily for several successive days or weeks. At the same time, the following injection should be thrown into the rectum twice a day, causing the child to hold it in the gut as long as possible, and using a compress over the anus, if it be required, to prevent its immediate discharge:—Take of a strong infusion of Golden Seal two fluidrachms, Tincture of Prickly-Ash berries twenty or thirty drops; mix for an injection.

HEADACHE.

HEADACHE may be *primary*, but more generally it is *symptomatic* of some other disease, and will cease on a removal thereof. When owing to constipation, it may be overcome by the appropriate measures for inducing regularity of the bowels. When it is owing to indigestible food, or acidity of the stomach, it is termed "sick headache," which generally commences with a blurred, obscure, or double vision, gradually growing more and more severe; a pain in the forepart of the head, at first hardly appreciable, but becoming very intense with more or less rapidity, and accompanied with nausea and vomiting, is present, and, when it reaches its height, the indistinctness of vision passes off. The face is pale, the patient is frequently chilly, and seeks to lie down in a place free from light and noise. Usually, after vomiting, a sleep ensues, from which the patient awakes free from the pain, but with a soreness in the front part of the head, which may continue for several days before it passes away. Attacks of sick headache may occur every few days, or at much longer intervals; they usually pass away in a few hours, when not treated medicinally, and sometimes an attack will continue for two or three days. Persons disposed to apoplexy are more liable to this kind of headache.

There is also a "nervous headache," which may be periodical in its attacks, or may be constantly present, but having periods of remission or diminution of its severity. This may also be owing to derangement of the stomach and bowels, and is generally connected with some nervous affection.

TREATMENT. Sick headache is sometimes cured at once by an emetic; but the most efficient preparation that I have ever used, is composed of Super-carbonate of Soda half a drachm, Prepared Charcoal a drachm, Paregoric a fluidrachm, water a fluidounce; mix well together, and give for a dose. This should be given as soon as the indistinctness of vision comes on, and must be repeated every fifteen minutes until relief is obtained. The patient must lie still, on his back, in a darkened room, where he will not be disturbed by any noise or conversation. In some patients, the employment of Essence of Peppermint instead of Paregoric, will be found more advantageous. If the headache is actually present, the same must be administered, and the head bathed with a cold mixture of Vinegar, Spirits, and rain water, equal parts. The patient should also endeavor to sleep, from which he must be allowed to awake naturally, and after which the pain will have more or less completely subsided. Persons subject to sick headache, should keep their bowels regular, avoid all articles of diet which are indigestible, or which will produce acidity of stomach, and should be careful not to permit any intense mental action or excitement at any time. Individuals liable to attacks of sick headache, will frequently ascertain that some peculiar articles of diet, which may be used by others with impunity, will induce the disease in them; in such cases, these articles should always be avoided. In the intervals between the attacks, means should be used to strengthen the stomach and nervous system; the following will be found excellent for this purpose;—Take of Aletridin, Alcoholic Extract of Black Cohosh, each, two grains, Sulphate of Quinia, Prussiate of Iron, each, one grain; mix, and divide into two pills, of which one may be taken for a dose, repeating it three times a day, and continuing their use daily for some months.

Nervous headache may be cured by the following pill:—Take of Extract of Aconite half a grain, Extract of Stramonium one-eighth of a grain, Valerianate of Quinia one-fourth of a grain; mix for a pill. The dose is one

pill, to be repeated every one, two, or three hours, according to the severity of the attack. At the same time, the patient should drink freely of an infusion of equal parts of Catnip, Sculleap, and Valerian. Another very useful agent for nervous headache, is composed of Powdered Assafetida four grains, Sulphate of Quinia one grain, Piperine two grains, Sulphate of Morphia one-eighth of a grain; mix for a dose, to be taken in a little water. The Extract of Belladonna, in doses of one or two grains, repeated every two hours, during the continuance of the pain, has been found very efficacious in intermittent and neuralgic forms of headache. Of course, the patient should be apprised of the liability it will have to produce double vision. In a few cases, I have derived much benefit from the Tincture of Gelseminum, given in doses sufficient to induce its peculiar symptoms.

Sometimes intermittent headache may be cured by the following snuff:—Take of Benzoic Acid two drachms, Sulphate of Quinia fifteen grains, Tobacco Snuff six drachms; mix thoroughly together, and divide into six equal parts, one of which must be daily used as a snuff.

In ordinary severe headaches, the feet and legs should be frequently bathed in a warm, stimulating alkaline solution, and Mustard poultices should be applied to the feet and along the whole course of the spinal column; the head should be bathed with some cooling lotion, and in all cases the bowels should be kept regular, the surface of the body frequently bathed, and the diet should be light, nutritious, and easy of digestion, selecting such articles as agree best with the patient. Gentle and regular exercise daily in the open air, with regular hours for sleep and rising, will be found important hygienic measures. Persons subject to headache, should never wear any thing tight around the neck, or upper part of the body.

TYMPANITES.

TYMPANITES, or Windy Distension of the Abdomen, is a disease chiefly attacking those of debilitated and relaxed habits, occasioned by fevers, profuse discharges, acute intestinal disease, improper or flatulent food, or too strict an abstinence from food, and all other debilitating causes.

SYMPTOMS. Tympanites is usually preceded by great flatulency, with expulsion of air, both upward and downward, a rumbling noise in the bowels, and frequently colicky pains. The swelling of the abdomen may come on slowly or suddenly, it distends the abdomen to a greater or less extent, does not yield readily to pressure, and is very tense and elastic, without any fluctuation. As the disease progresses, there will be thirst, impaired appetite, costiveness, febrile symptoms, difficulty of breathing, pain in the loins, difficult urination, and even a total suppression of this discharge, with a general emaciation. Cough is apt to be present, especially in an advanced stage. It is an obstinate and dangerous disease, slow in its progress, and terminating either in dropsy or gangrene. When the constitution is unimpaired, and wind can be expelled from the bowels, the case is favorable.

The disease may exist in the *intestines*, or in the *abdominal cavity*; when in the latter, the swelling is more uniform, the tension greater, and, more elastic, giving a sound on percussion like that of a drum; there are no discharges of wind as in the first form, and the disease is likewise more serious.

* TREATMENT. Stimulating injections should be given two or three times a day, for the purpose of effecting a discharge of wind from the bowels, which will be found to afford much relief. To a pint of a strong infusion

of Spearmint, add a gill of Tincture of Prickly-Ash berries, half a gill of Tincture of Assafetida, and a teaspoonful of Ginger; inject as much of this liquid into the bowels each time as possible, and repeat it two or three times a day, or even oftener, according to the symptoms,—the patient should endeavor to retain it for some time, unless it produces an immediate discharge of gas. In connection with this, the abdomen of the patient should be slowly and continually rubbed downward with the hand of an attendant, for several hours in succession, or until the swelling has disappeared, making as much pressure as can be borne. During this friction, or shampooing of the bowels, the following mixture may be rubbed on them, from time to time, in small quantities:—Take of Oil of Prickly-Ash berries, Oil of Cajepu, each, one fluidrachm, Oil of Stillingia half a fluidrachm, Oil of Sassafras half a fluidounce; mix. Or a mixture of equal parts of Oil of Turpentine, Oil of Sassafras, and Camphor, may be substituted. This friction and pressure upon the abdomen, will be found an important part of the treatment. To assuage the thirst of the patient, infusions of Ginger, Horseradish, Spearmint, Horsemint, Dioscorea, Pleurisy root, &c., may be administered.

Should these means fail, it will become necessary, in addition, to administer an active purgative, as the Compound Powder of Jalap,—and this will be almost always necessary, even at the commencement of the treatment, in those cases where there has been a constipation of the bowels for a day or two previous to the attack.

In obstinate cases of *abdominal* tympanites, it may become necessary to tap the patient, as in dropsy, and thus permit the gas to escape from the cavity of the abdomen; giving tonics internally.

During the disease, the diet should be light, digestible, and of a nutritious character; all food which will cause acidity or flatulency, should be avoided, and to check the fermentation of the food, the solution of Sulphite of Soda, on page 419, a few drops of Creosote, some Brandy, or one of the mineral acids, as Nitric, Muriatic, Sulphuric, or the Tincture of Muriate of Iron, may be given. After the removal of the tympanites, the patient should use means to strengthen the stomach and bowels, and to maintain regularity in the alvine evacuations. He should also attend to the skin, by frequent bathings and frictions, exercise moderately and daily, and be careful as to the nature of his food and drink.

VERMES, OR WORMS.

WORMS are found in all animals, and in various parts of them. In man they have been met with in the kidneys, liver, eye, lungs, brain, &c., but those which are more frequently met with, infest the intestinal canal. These are, 1. The *Tricocephalus dispar*, or long thread worm, which is a round, white worm, about one or two inches in length, and occupies the large intestines. 2. The *Oxyuris vermicularis*, maw, or thread worm, usually called *ascarides*; it is a small, thin, white worm, not exceeding an inch in length, with a pointed tail, and chiefly lodges in the rectum, where it gives rise to much itching and uneasiness. These worms are very common to children, though adults may have them. 3. The *ascaris lumbricoides*, or long, round worm, which is a round worm varying from three to twelve inches in length, and from the twelfth to the sixth of an inch in diameter; its color varies according to that of the food, being frequently milky, or of a brown-ash—and occasionally blood-red. It is more commonly found in the small intestines. 4. The *Tænia solum*, or long tape worm is a flat, ar-

ticulated, or jointed worm, with four suckers at its head, of a white color, and varying in length from a few feet to several hundred. It inhabits the small intestines. 5. The *Bothriocephalus latus*, or broad tape worm, is flat or nearly so, from ten to twenty feet long, and from one-sixth of an inch to half an inch broad. It is seldom met with in this country.

SYMPTOMS. When worms are discharged during the progress of any disease, it is usual to consider this as sufficient proof that the malady is occasioned by them, but this is frequently a mistaken conclusion. In febrile and inflammatory diseases especially, the deranged state of the secretions, the increased temperature and altered diet, renders the situation of the worms incommodious, and they remove to some other part, and may pass by mouth or by stool; yet they may not have been at all instrumental in the production of these diseases. However, in all such cases, the best course to adopt is always to administer worm medicines, as the presence of these parasites almost invariably aggravates, and often renders fatal, a disease, in the production of which they had no creative agency, yet the presence of which has caused them to migrate, or as commonly termed, "set the worms to moving." With children, particularly, this course is the best, more especially when they are cutting their teeth, and have fevers, convulsions, &c., for although among delicate infants an increase of worms in the bowels will produce many unpleasant symptoms, as convulsions, fevers, apparent dropsy of the head, &c., yet, they are not so often the cause of these affections, as they are of their obstinacy and fatality; hence, in such cases, vermifuge cathartics will always be found decidedly beneficial.

The symptoms of the presence of worms are very equivocal, with the exception of the maw, or thread worm, which may be known by the annoying and almost intolerable itching which they occasion within the anus, and by their being frequently seen in considerable number in the feces; not unfrequently they occasion tenesmus, and even a falling of the fundament, *prolapsus ani*.

In children, a paleness of the countenance, itching of the nose, starting and grinding of the teeth during sleep, irregular appetite, fetid breath, hard swelled belly, upper lip considerably swollen, sore mouth at times, picking of the nose, and *one of the cheeks more or less constantly flushed*, with more or less fever, may be considered certain evidences of worms. In all diseases of children, the above flush on the cheeks, which may remain constantly, or appear at intervals, should be noticed, as, with the exception of true hectic, it is almost invariably an evidence of the presence of worms, either as a cause, or an aggravation of the disease.

The more constant and less uncertain symptoms of worms, are: fetid breath, especially in the morning; bad gums; itching of the anus, irregular appetite, sometimes bad, at other times quite voracious; looseness, with slimy discharges; irregular colics; gripings; great thirst; and involuntary discharge of saliva, especially when asleep; frequent pains of the side; a short, dry cough; unequal pulse; pale, whitish, and frothy urine; desire for salted meats and fish; peculiar pale, unhealthy and bloated countenance, with a dark, hollow circle around the eyes. Sometimes slow fever, swoonings, drowsiness, palpitation of the heart, cold sweats, convulsions, and many unaccountable nervous symptoms.

Tape worm may be known by a gnawing pain in the stomach, irregular appetite, but generally voracious, and the food eaten does not nourish the system, as evident from emaciation; a hard cough, with considerable expectoration of mucus, great thirst at times; debility; and small bodies in the excrements, resembling melon or cucumber seeds.

TREATMENT. The indications are to remove the worms whether dead or alive, and then impart tone and vigor to the intestinal canal, in order to prevent their future generation.

In most cases, and especially among children, the following Worm Cordial will be found to not only remove the worms, but also to strengthen the bowels, thus fulfilling both the above indications:—Take of fresh Black Alder Berries one pint, Cedar or Juniper Apples (recent) one pound; bruise them, and digest in a quart of Alcohol for fourteen days; then strain and add one pint of Molasses. The dose is a teaspoonful, repeated three times a day, for children one or two years of age; a table-spoonful, three times a day, for adults. As soon as it has purged sufficiently, the dose may be lessened, when it will act as a tonic, and its use should be continued for several weeks. It is pleasant, and children generally love it.

Several other vermifuge remedies have been successfully used, and among them the following:—1. Take of Castor Oil, Wormseed Oil, each, one fluidounce, Oil of Turpentine, Oil of Anise, each, half a fluidounce; mix. The dose is ten or twenty drops for a child one or two years old, to be repeated every three or four hours; and, after using it two or three days in succession, a purgative must be administered. 2. Take of Castor Oil, Wormseed Oil, each, one fluidounce, Oil of Anise half a fluidounce, Tincture of Myrrh half a fluidrachm, Oil of Turpentine twenty minims, Croton Oil two drops; mix. The dose is a teaspoonful every two hours for ten or twelve hours, to be followed, if necessary, by a purgative.

The Entozoic Powder I have used for many years, and it has never disappointed me in any one instance; it is probably unsurpassed in removing any kind of worm which may exist in the human intestines. It is very bitter and disagreeable to the taste, but it may be relied on as certain in destroying and removing worms, whether in adults or children. It acts by destroying not only the worms themselves, but likewise removes that slimy substance in which they abound, and which is so favorable to their production. It will be observed, that in all cases where worms exist in the bowels, the passages produced by this remedy are slimy, sometimes whitish, with specks presenting the appearance of worms cut up. On account of its bitterness some children cannot take it without immediately vomiting it up; among such, other means must be used.

After removing the worms, *in all cases without exception*, when not contraindicated, some tonic medicine to strengthen the bowels should be used to prevent their forming again. I commonly use the following tonic cordial: Take of Gentian, Golden Seal, Colombo, each, in powder, one drachm, Cinnamon, Cardamom seeds, Prickly-Ash berries, each, bruised, half a drachm, good Brandy one pint; mix, and let them macerate for a few days. The dose for a child is from half a teaspoonful to a table-spoonful, three times a day, in sweetened water.

The thread worms are frequently difficult to remove; in nearly all cases, however, a strong decoction of the Entozoic Powder will dislodge them when in the rectum, if used as an injection. Or, the following will be found very efficacious:—Take of Balmony one ounce, Mandrake half an ounce, water one pint; mix, and boil to form a pint of strong decoction, to which add a gill of Molasses, a teaspoonful of Salt, and a fluidounce of Tincture of Assafetida. Use this as an injection, in the quantity of half a gill or a gill at a time, according to the child's age, repeating it two or three times a day for several successive days.

Children are often troubled with a choking, or difficulty of swallowing,

as if something were in the throat—the nurses sometimes call it “a rising of the worms”—it may be, perhaps, owing to worms working their way upwards—but at all events, a draught of salt and water, will generally be found effectual in removing it.

The diet for children who are troubled with worms, or who are using the above tonic tincture, should be salt, as salt mackerel, herring, salmon, &c., and their ordinary food may contain an extra quantity of salt. Onions, and garlies, with salt, are also useful. All acid, fat, or greasy articles of diet must be avoided, when worms are suspected, or where the child is subject to them; the diet may be full and nutritious.

The following preparations have been highly extolled for their anthelmintic properties: 1. Pulverized bark of the root of Black Alder, (*Prinos Verticillatus*), in teaspoonful doses and in Molasses, three times a day, brings the worms away whole. 2. The juice of Blue Flag, (*Iris Versicolor*), for tape worm. 3. Eat freely of Garlic and Salt, and administer every other day a purgative of Mandrake root;—this has expelled tape worm. 4. Make a strong decoction of Rue, Balmony, and Wormwood; take equal parts of this decoction and beef's gall, to which add a little Aloes and Assafetida; boil the whole together, to the consistence of a plaster. Apply a plaster of this, about three inches square, on the pit of the stomach, for two or three days, changing it every day,—at the end of which time give a strong purge. 5. Take of Santonine, (prepared from *Semen Contra Vermes*), one drachm, Sugar five ounces, Gum Tragacanth half a drachm, water sufficient to form into lozenges. Divide into one hundred and forty-four lozenges, and let the child eat from five to ten a day. 6. Take of the bark of the root of the Pomegranate two ounces, water two pints. Boil to one and a half pints. Dose, half a gill, every hour. For tape worm,—four or five doses are generally sufficient to expel the worm.

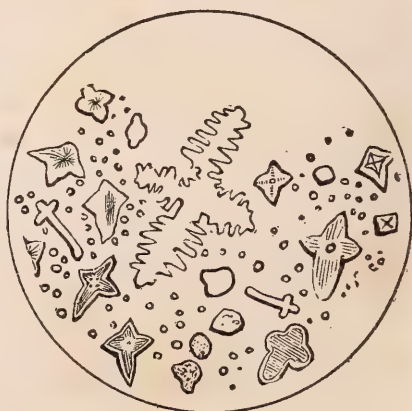
DISEASES OF THE URINARY ORGANS.

UNDER this head will be considered the several derangements which may be met with in the functions of the urinary apparatus, and which are not referred to in other parts of the work. Acute or Chronic Inflammation of the Kidneys, and of the Bladder, will be found among Inflammatory diseases, and Hematuria among Hemorrhages.

BRIGHT'S DISEASE OF THE KIDNEY.

ALBUMINURIA, or Bright's Disease of the Kidney, is known by a morbid condition of the urine, which is habitually impregnated with albumen. Healthy urine contains no albumen; but that in which it exists is more frothy than usual when shaken, and on blowing into it through a tube, bubbles are formed as in soapy water. Its specific gravity varies from 1020 to 1004, being lessened as the disease progresses; it is usually found with

Fig. 29.



Evaporated residue of healthy urine.

epithelial scales, mucus, blood-discs,* fibrous casts of the uriniferous tubes, and saline sediments. Albumen may always be detected in urine by the aid of heat and nitric acid; a small quantity being placed in a test tube, and heated by the flame of a spirit lamp, if albumen be present, it will coagulate, forming a whitish cloud; or, if in considerable quantity, it will form into flakes or small curdy fragments. Nitric Acid added to this will not dissolve the albuminous opacity. Again, to another portion of urine, add a small quantity of Nitric Acid, which will precipitate any albumen in a whitish flaky or pulpy form; and if heat be applied to this it will not be dissolved. In the urine of those who have long been taking Copaiba or Cubebs, Nitric Acid will produce coagulation, which, however, may be known from albumen, by the coagulum thus formed floating on the top of the urine, while albumen sinks. When the urine is alkaline, as determined by its restoring the original blue color to reddened litmus paper, it must be rendered acid before albumen will be precipitated. Acetic and Tartaric Acids do not precipitate albumen. When albumen is found in the urine, this should be examined from time to time to ascertain if it continues, for it frequently exists without any serious difficulty; its habitual presence is indicative of structural change in the kidney.

SYMPTOMS. The only positive symptom of the disease under consideration, is the persistency of albumen in the urine, but with this are generally found certain secondary or indirect symptoms, which, however, vary considerably in different persons. The patients are subject to disordered digestion; obscure pains or uneasiness in the loins; sickness and vomiting at different times; debility; the blood becomes modified, with considerable loss of its red particles; the urine may be red, brown, or dingy, containing albumen, fibrinous particles, and epithelial scales with fat; dropsical swelling of the face, or some other part of the system occurs and continues to spread and increase; firm pressure over the region of the kidneys produces more or less pain; the skin is dry and hard, not perspiring even under exercise; pale, anemic, and bloated; drowsiness is a common symptom, and not unfrequently convulsions or apoplexy.

Sometimes the patients are annoyed by a frequent desire to urinate, by flatulence of the stomach and bowels, or, by obstinate costiveness, or diarrhea. In some cases the urine is very abundant, in others quite scanty, and always of low specific gravity. The pale, bloodless countenance, dropsical condition of the cellular tissue, and albuminous urine, are certain indications of Bright's disease. Toward the termination of the disease, the drowsiness increases, coma ensues, and death; and before death, the albumen may have disappeared from the urine. Acute inflammation of the serous membranes, disease of the heart, and dyspepsia are very apt to be induced by this affection of the kidneys.

CAUSES. Albumen may be found in the urine, owing to some temporary irritation, and may pass away without leaving any permanent injury; but when it is persistent, as previously remarked, it is owing to a congested condition of the kidneys; fungus hematodes of the kidneys; granular disease of the kidneys; or fatty degeneration of the kidneys, to all of which, the term Bright's disease is commonly applied. These conditions of the kidneys may arise from external injuries, recession of cutaneous eruptions, long-continued use of stimulating diuretics, frequent exposures to cold, intemperance, excessive masturbation or debauchery, neglect of proper exercise, and, probably, various other causes at present unknown.

* See fig. 12 on page 169; fig. 16 on page 218; fig. 17 on page 301; fig. 18 on page 301, and fig. 19 on page 302.

TREATMENT. From the obscurity which still enshrouds this disease, there has been no treatment yet adopted, which can be relied upon as positive or special; and it has been found that according to the nature of the secondary diseases which arise out of and complicate it, must the treatment be modified. The indications, however, are firstly to relieve any local excitement or irritation which may be present, and, secondly, to restore the blood to a state of health.

To fulfil the first indication, the skin should be frequently bathed with an alkaline solution rendered slightly stimulant by the addition of Whisky, and frictions should also be frequently employed. Perspiration should be produced every few days by means of the Spirit vapor bath, and counter-irritation should be applied over the region of the kidneys, as by Firing, Cupping, or the intermitting use of the Compound Tar plaster, which will be found a very important agent in the curative treatment. The bowels should be kept regular by small doses of Podophyllin and Leptandrin—in some instances by the White Liquid Physic. And whenever there is a disposition to drowsiness or coma, they should be actively purged, in order to relieve the head symptoms. When there is a deficient action of the kidneys, they may be gently urged by mild diuretics, as an infusion of Queen of the Meadow and Peach leaves, or of Marshmallow root. In many instances I have found the use of unfermented cider, or of the Compound Infusion of Parsley, very valuable agents in restoring the urinary secretion, removing the dropsical swelling of the system, and causing the albumen to disappear. Can it be that the Malic Acid of the cider exerts any salutary influence upon the diseased kidney?

To restore the blood to a healthy condition, I have found the most benefit from the Tincture of Muriate of Iron, giving about twenty drops of it, in a wineglassful of water, and repeating this dose three times a day. In some instances I have used in connection with this, the Iodine pill two or three times a day; and in others, a Solution of the Iodide of Iron. The Iron in the Compound Infusion of Parsley, will likewise be found to exert a beneficial influence. The Lactate of Iron, in doses of five grains, repeated three or four times a day, has been found efficacious; and probably some other ferruginous preparations might be found useful, as the Ammonio-Tartrate of Iron, or the Ammonio-Citrate, or the Citrate of Iron and Quinia. Probably a solution of the Malate of Iron will be found very valuable. The use of Malic Acid, and the Malates, the greater part of which are more or less soluble, has been entirely neglected in the practice of medicine, and I would here invite the attention of the profession to them. Malic Acid added to many insoluble agents will have the effect at least, of rendering them soluble in the stomach. In addition to these means, if symptoms of periodicity are present, Sulphate of Quinia and Prussiate of Iron, equal parts of each, may be administered in doses of two or three grains every hour during the remission or intermission.

The diet must be plain, nutritious, and easy of digestion, avoiding all fats, high-seasoned food, hot bread, pastries, butter, aromatics, stimulants, &c. Regularity in eating, sleeping, and gently exercising in the open air is indispensable, and all the exciting or disposing causes of the disease must be avoided. I will here give briefly the case of a man about thirty years of age, a carpenter, who was cured of Bright's Disease. On the 12th of May, 1854, he had the following symptoms:—Vomiting almost daily, and which had existed for the last three years; sometimes it occurred on rising in the morning, but more generally between meals, frequently continuing for three or four hours at a time; appetite lost; much emaciated; pale, dry, and unperspi-

ring skin, which had been thus for about two years; the bowels very irregular, being sometimes costive, and at others loose, and the food passed imperfectly digested; for over four years he has experienced a dull pain commencing in the loins and extending to the bladder, peritoneum, and left pleura; at times the sensation of heat is so great as to increase perspiration, says it feels like a flame; he has experienced this sensation more or less for the last three years, and for the last year it has occurred daily, sometimes in the morning, at other times both in the morning and evening, and usually continuing for about an hour. Has some cough, not so severe as about a year since, when he was supposed to be laboring under consumption; dizziness, and pain in the head almost constantly for the last three years, often falling asleep suddenly in the midst of conversation; rheumatic pains in the right knee and ankle; palpitation of the heart, and more or less difficulty of breathing for the last three years; soreness in the right side. Seven years ago he had an eruption on the back and legs, which continued for two years; for eighteen months has had frequent numb sensations in the hips and thighs, continuing for two hours at a time; while eating, his penis and testicles retract, almost disappearing, and a thick white perspiration appears on the inside of the thighs, of the consistency of cream, which continues for about fifteen minutes after the meals; urinates frequently during the twenty-four hours, small in quantity, of various colors and fetid; acids and bitter agents most acceptable to his palate and stomach. About four years since he hurt himself by lifting timber, and shortly after discharged blood with his urine; has been treated by various physicians for gonorrhea, consumption, diarrhea, stone in the bladder, &c., &c. On examining the urine by heat and Nitric Acid, albumen was discovered.

The treatment was as follows:—Twice a day, as soon as the symptoms of irritation in the kidneys commenced, a tepid pack, or sheet-bath, the sheet being wet with a strong decoction of Hoarhound, was applied; on coming out of this bath, the right side, and especially over the region of the liver was rubbed for about ten minutes, with diluted Nitro-Muriatic Acid, strong enough, however, to cause a tingling sensation. About fifteen minutes before each meal, the following was administered:—take of Decoction of Peruvian bark a table-spoonful, Tincture of Muriate of Iron ten drops; mix. His diet consisted of a few spoonfuls of fresh milk and toasted corn bread, as much as could be retained on the stomach.

19th May. Vomiting is not continued so long; stools changed from a white to a slightly yellowish color; stomach retains half a tumbler of milk; falls asleep in the bath; rests better than for a long time. Ordered a bandage of four thicknesses of sheet, extending from the region of the stomach to the hips, and wet with the decoction of Hoarhound to be worn all the time, covering it with oil silk. Continue previous treatment.

2d June. Perspires freely, appetite improved, burning sensation not continued so long, but more albumen in the urine, with small balls, probably fibrinous, forming a layer about half an inch in depth, when the urine is in a quart bottle; all other symptoms improved. Continue the treatment.

22d June. Head symptoms decidedly improved, little or no nausea, appetite increased, sleeps better at night, the heat and irritative symptoms checked when in the bath. Ordered soups for food, Compound Tar plaster over the loins, and to use the above sheet-bath cold, as it now seems to be more agreeable. Other treatment to be kept up.

10th July. Burning sensation seems to be arrested, urine increased in quantity, an eruption all over the body—the Tar plaster has produced a large sore over the loins, which discharges nicely. Continue treatment.

15th July. Six pints of urine discharged in twenty-four hours; no albumen detected by heat or Nitric Acid; bowels loose; burning sensation on urinating. Continue treatment.

1st August. White sand in urine, about an ounce per day, with albumen; Nitric Acid dissolves the sand but leaves the albumen. Ordered Nitro-Muriatic Acid, ten drops in water, to be repeated three times a day.

10th August. Decrease of phosphates; urine diminished, and alkaline; all the former symptoms much improved; sleeps well at night; no nausea; no head symptoms. Ordered the sheet to be wet in vinegar instead of the decoction.

20th August. Urine acid; no phosphates; two and a half pints of urine discharged per day; much improved in flesh; stands erect; skin natural.

2d September. Complains of no former symptoms, says he feels better than for seven years past; wants to be at work, as he has not done anything for four years, and states that it has cost him nearly \$2,000 for medical advice and treatment. Dismissed him, but advised him to continue the acid for a few weeks.

1855, Nov. 6th. Saw him again; appears to be well, can do a good day's work, has gained fifty-eight pounds in flesh, and considers himself permanently cured.

DIABETES.

SYMPTOMS. Diabetes may come on suddenly, or gradually; in the latter case, there will be frequent discharges of urine, and which will disturb the patient frequently during the night. The appetite is generally voracious, with unquenchable thirst. The sexual appetite is deficient. The digestion becomes imperfect; the skin dry and harsh; the tongue clammy, and often furred dark, or red, with a secretion of thick, viscid saliva; the gums are swollen and inflamed, often bleeding upon the least touch; the breath has an odor similar to that of the urine, like the smell of hay, and frequently the same scent issues from the body; the bowels are costive, with occasional pains of a colicky nature. Frequent attacks of dizziness and pain in the head, are most usually present; the patient becomes restless, dissatisfied, and the moral and intellectual faculties are gradually blunted; emaciation, diarrhea, and dropsical swelling of the limbs make greater and greater progress, and ultimately hectic fever and death.

The most prominent feature in the disease is the character of the urine; it is very large in quantity, frequently amounting to four or five gallons in the course of twenty-four hours. It is very clear, paler than natural, though sometimes tinged with green of a specific gravity varying from 1025 to 1055, has a sweet taste, an odor like hay or apples, and ferments very readily. It is apt to be deficient in urea, though it may contain urates or phosphates. Diabetic urine contains a large amount of grape sugar, for the detection of which several methods have been recommended, the following are among the best:—1. *Trommer's test*.—Add a few drops of a solution of Sulphate of Copper to the urine, enough to give it a pale blue tint, (a pale blue Phosphate of Copper may be precipitated); now add an excess of Liquor Potassa, if sugar be present, a purplish-blue solution is formed, and if the mixture be carefully boiled for a few minutes, a reddish or yellowish-brown precipitate ensues; if no sugar, a black precipitate. 2. *Moore's test*.—Add to the urine about half its bulk of pure Liquor Potassa, and boil gently for a few minutes; if sugar be present, the liquid will assume an orange-brown, or

bistre tint. 3. *Horsley's test*.—Mix together equal parts of Neutral Chromate of Potash and Liquor Potassa. Place a small quantity of this test in some urine in a test tube, and boil; if sugar be present, a deep sap-green color will ensue from the decomposition of the Chromic Acid; the reduced Oxide of Chromium is held in suspension by the Potash. To test cane sugar, substitute a solution of the Bichromate of Potash for that of the Neutral Chromate. 4. *Luton's test*.—To a cold saturated solution of Bichromate of Potassa add an excess of Sulphuric Acid in such a manner that some free Sulphuric Acid will be present when all the Chromic Acid is liberated. The liquid will be of a beautiful limpid red color, and is composed of water, Chromic Acid, Bisulphate of Potassa, and an excess of Sulphuric Acid. Add enough of this test to the suspected urine to impart a red color to it, then warm the mixture, a brisk effervescence ensues, and the color changes from red to emerald green, if sugar be present.

When exposed to the air, a fungous growth called penicilium glaucum, may frequently be seen in diabetic urine; and a few drops of yeast added to such urine, at at 70° or 80° Fahrenheit, will cause it to undergo vinous fermentation.

CAUSES. Diabetes is met with in both sexes and at various ages, but chiefly among males at an advanced age. It may be induced by any means that will derange the digestive functions, impoverish the blood, and debilitate the system, as intemperance, excess in venery, immoderate evacuations, constant use of acid drinks, crude, unwholesome diet, exposures to cold, use of mercury, &c.

TREATMENT. The bowels in this disease must be kept regular by means of Rhubarb in small doses repeated three times a day, or, minute doses of Podophyllin and Leptandrin; active purgation must be avoided. The skin must especially be attended to, it should be bathed daily with a stimulating liquid, and dried with considerable friction. The application of cold water along the whole length of the spinal column every morning, with brisk friction subsequently, will be found very advantageous. Counter-irritation along the vertebral column, by dry Cupping, or by Firing, should be frequently used, and will have a very happy influence. As a tonic, to restore the digestive organs to a healthy condition, and cause a rapid decrease of the urinary discharge, I know of no better agent than an infusion of equal parts of Unicorn root and Bugle weed, which should be drank frequently during the day. When there is great nervous irritability, in connection with this, equal parts of Opium and Ipecacuanha may be given in doses of three grains, and repeated as often as necessary. When the system appears to become habituated to the above infusion, it may be laid aside, and the following substituted:—Take of Laudanum one fluidrachm and a half, Tincture of Muriate of Iron two fluidrachms, Muriate of Quinia, (or the Sulphate) eight grains, water six fluidounces; mix. Of this mixture one fluidounce is a dose, and should be repeated three times a day. This preparation and the above decoction may be used alternately, from time to time, as they lose their active influence over the disease. As there is more or less debility attending this disease, the Phosphate of Iron

Fig. 30.



a. *Penicilium glaucum*, a fungus growth in acid urine containing albumen or sugar, when exposed to the air.

should be administered in doses of from three to six grains, repeating the dose three or four times daily. Creosote, and the solution of Bisulphate of Soda, named under Water Brash on page 407, have occasionally been found efficacious.

The patient should take moderate exercise daily in the open air, if his strength will permit; his sleep should be limited to nine hours out of the twenty-four; and all sexual indulgence must positively be prohibited. His diet should be mixed, consisting of animal and vegetable food, avoiding however all articles that contain large amounts of sugar and starch; the cruciferous vegetables will be found the best, as, water-cresses, turnip-tops, dandelion greens, spinach, celery, cabbage, &c. Meats, game, poultry, eggs, rice, and milk, may also be used; but sugar, beets, parsnips, potatoes, arrow-root, bread, corn in any shape, and all fruits, must positively be avoided. If bread be used, it must be such as is well-fermented, stale, and eaten very sparingly. For drink the patient may use a cold infusion of green tea, water acidulated with Nitric, Muriatic, or Phosphoric Acids, animal soups, and milk and lime-water; and he should be urged merely to sip at frequent intervals, rather than to indulge in large draughts at once, which latter will be certain to increase the disease. No liquors must be used except to sustain strength, and those which are better adapted to this purpose, are brandy, whisky, claret, and pale rum—but no ale, porter, cider, wines, &c. Not long since a diabetic patient of mine, who had taken cold, was advised to take a domestic preparation of Butter, Vinegar, and Molasses; he made a mistake, substituted Alum for the Butter, and used the mixture very freely. It had such a beneficial effect upon the urinary discharge, that as a matter of experiment I advised him to continue its use; he did so, and a permanent cure was the result.

SUPPRESSION OF URINE.

SUPPRESSION of Urine, Ischuria Renalis, is generally symptomatic of some other disease, but is sometimes idiopathic. It is sometimes used as

Fig. 31.



a. Chloride of Sodium, in combination with urea, and evaporated quickly from urine.

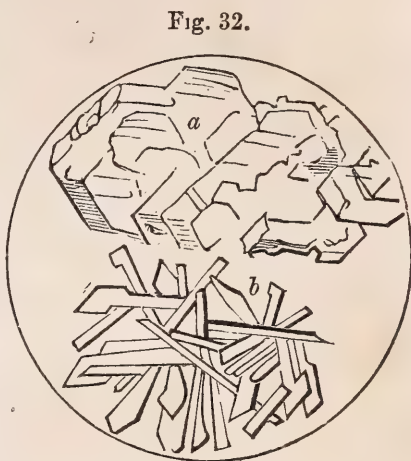
b. Chloride of Sodium resembling crystals of Cystine, from slow evaporation of urine.

c. Chloride of Sodium crystallized slowly from urine, also resembles Oxalate of Lime, but differs in being soluble in water.

synonymous with *retention of urine*, but it is entirely a different symptom, being a greatly diminished or complete suspension of the urinary excretion by the kidneys. The disease is more apt to occur among corpulent persons of advanced age.

SYMPTOMS. In the adult the symptoms of the disease in the earlier periods are those merely of depending illness, the patient makes little or no water, and feels anxious, restless, and cannot say exactly what ails him. There will be a sense of uneasiness or pain in the loins, extending to the flanks and bowels. Nausea comes on, and at length vomiting. The patient has a dull and abstracted look, and is not disposed to any bodily or mental exertion. On feeling over the region of the bladder there is no fulness or pain, and on passing a catheter into the bladder, a tablespoonful, a few drops, or even no urine may be obtained. To the bystanders there does

not appear to be much the matter, and they are apt to be surprised that the physician should attach so much importance to the case. In a little while the patient becomes drowsy, wanders in his mind, talks incoherently, hiccoughs, and eructates, and in from thirty to forty hours dies suddenly in a comatose condition, or in convulsions. In one case, the patient asked for drink, and as he was raised in bed to enable him to swallow it, he fell back dead. The cause of death in suppression of urine is the retention of urea in the system, which is a poisonous excrementitious matter, and which if not passed off is as certain to produce death, as when the lungs do not set free carbonic acid gas. It is sometimes the case that a suppression of urine may continue for a considerable time, and not prove fatal, the urea being carried off by excessive sweating, or diarrhea—but such instances are rare. When urea is present in healthy urine containing Chloride of Sodium, crosslets and daggers, as in fig. 31, will be seen as the urine evaporates from a glass slip under the microscope. When an equal bulk of Nitric Acid is added to urine, and exposed to the action of cold, crystals of Nitrate of Urea will form, more or less readily in proportion to the excess of Urea, as in fig. 32.



a. Nitrate of Urea.

b. Oxalate of Urea.

CAUSES. These are not clearly known. It may be induced by exposure to cold; by injuries to the back or loins; by irritation of the kidneys, induced by the lodgment of a calculus in the kidneys or ureters; and by sympathetical irritation, the effect of powerful medicines. A slight suppression may continue for a considerable time without being followed by any unpleasant consequences; but when it is complete, and the symptoms of lethargy or coma ensue, they are evidences that the brain and nervous system are succumbing under the noxious agency of the urea, and in such cases a cure is rarely effected. Some consider this affection due to a paralysis of the nerve-centers, or of the kidneys, others, to the fact that the urea is not formed in the kidneys as usual.

TREATMENT. The patient should be at once placed in a bath as warm as he can bear, and should remain in for some fifteen or twenty minutes. As soon as he has been removed from it and dried, apply cups freely over the region of the kidneys, and follow them by hot fomentations. An active cathartic will be found efficient, and the Compound Powder of Jalap, to a dose of which about fifteen grains of Cream of Tartar may be added, will probably be equal to any. An infusion of Queen of the Meadow root, and Peach leaves, equal parts of each, may be drank freely, as well as of Marsh-mallows, Hair-cap moss, &c. Stimulating injections will also be found useful, among which, I prefer the following:—Take of a strong infusion of Horseradish root eight fluidounces, Tincture of Prickly-Ash berries four fluidounces, Tincture of Nux Vomica three fluidrachms; mix. Inject into the bowels about half a fluidounce, and repeat it three or four times a day, as the case may require. This treatment should be pursued very energetically; the bath may be required two or three times in the course of the day. A very valuable pill is composed of Eupurpurin two scruples, Xanthoxylin one scruple, Strychnia one grain; mix thoroughly and divide into twenty pills, of which one may be given two or three times a day.

Any disease co-existing with the suppression, must, of course, be treated according to its indications.

As we cannot determine really upon the cause of the suppression, it is always proper to administer active, but not stimulating diuretics, and if these do not relieve after a reasonable time, with the other measures, very little encouragement can be afforded. The same may be said where the suppression follows a long-continued organic disease of the kidneys.

RETENTION OF URINE.

RETENTION of Urine is applied to those cases where the urine is excreted by the kidneys, but from some cause in the ureters, urethra, or bladder, is not discharged externally.

SYMPTOMS. There is an inability to void the urine on attempting to do so, and after several ineffectual attempts, the patient becomes fatigued with his efforts, and also alarmed. An uneasiness and pain is felt in the region of the bladder, which extends to the thighs and loins, the bladder can be felt above the pubes, hard and enlarged, and pressure upon it causes increased pain. The desire to urinate becomes more and more urgent, the patient strains, but accomplishes nothing in the way of urinating. As this state progresses, the pulse becomes hard and frequent, the face flushed, the skin hot, the heart beats rapidly, and the tongue is covered with a white fur. As the kidneys go on excreting urine, the danger lies in a rupture of the bladder, or in inflammation of the peritoneum. Sometimes the urine dribbles away, from the fact that the distending force of the accumulated fluid equals the resistance, and this condition though not followed by a rupture of the bladder, may give rise to a serious inflammation. The bladder has been known to contain one gallon of urine without rupturing; and the rupture when it does occur is usually on the third or fourth day.

Some writers have divided Retention of Urine into three degrees, viz:—*Dysuria*, in which the urine is passed with pain, and considerable heat or scalding; *Strangury*, in which the urine is voided drop by drop, with great difficulty, and is attended with heat or scalding pain, tenesmus of the neck of the bladder, &c.; *Ischury* or *Ischuria Vera*, in which the urine having passed from the kidneys to the bladder, the patient cannot void it, notwithstanding the desire which is incessantly harassing him.

CAUSES. Retention of urine may be owing to a paralysis of the bladder; mechanical obstruction at the neck of the bladder, or in the urethral canal; inflammation of the neck of the bladder; injuries to the bladder, or in its neighborhood; irritation of the parts from gravel or stone, or from cantharides taken internally, or absorbed from a blister; tumors; enlarged prostate glands, &c.

TREATMENT. This will vary according to the cause. Should there be some mechanical impediment to the flow of urine, at the neck of the bladder, or in some part of the urethra, it may be proper to introduce a catheter; but if from stricture or other cause, this is not deemed advisable; a surgical operation may have to be resorted to.

When the retention is owing to inflammation about the neck of the bladder, the patient may be placed in a warm hip bath, and remain there for fifteen or twenty minutes, and on coming out, a hot fomentation of equal parts of Hops and Lobelia leaves should be applied to the perineum, renewing it frequently; if, after an hour, the urine does not pass, a catheter may be introduced. In some severe cases, it may become necessary to pro-

duce perspiration by administering a dose or two of the Compound Tincture of Virginia Snakeroot, and also to effect relaxation of any spasm which may be present, by injections into the bowels of equal parts of the Compound Tincture of Lobelia and Capsicum, and warm water, having the patient to retain the injection as long as possible. If the bowels be costive, an active dose of the Compound Powder of Jalap should be given. In one case which I attended, the feces were hard and impacted in the rectum, and could not be dislodged by purgatives or injections, and it became necessary to scoop out a portion of the fecal matter before an alvine operation could be procured. When fresh Stramonium leaves can be procured, they should be bruised and applied to the perineum; they are a superior agent in relieving inflammation and congestion about the neck of the bladder. In from half an hour to an hour after their application, it will be found that the catheter will readily pass into the bladder. (It will also be found a valuable application in retention from enlarged prostate.) In the introduction of the catheter, great care should be used; it should be passed with gentleness, lest the urethra become inflamed or injured, effects which are very apt to follow unskilful and improper attempts. Again, in these cases of retention, they should not be permitted to continue too long without treatment, lest serious mischief ensue.

When paralysis of the bladder is a cause of retention of urine, the bladder should be evacuated once or twice a day with the catheter, while, at the same time, means should be employed to cure the paralysis. Should the catheter be passed with difficulty and pain, it will be better not to remove it after its introduction, unless too much irritation be kept up by its presence; and when it is allowed to remain in, the open extremity should be plugged, so that the urine can be passed as often as required. To overcome the paralysis, a current of electro-magnetism may be passed through the parts once or twice a day; and a constant discharge should be kept up, by means of the Compound Tar plaster applied over the spinal column immediately below the small of the back, or over the lumbo-sacral region. The bowels should be kept regular, and the skin bathed and rubbed daily. Internally, the following will be found very useful, as its effect upon the nervous system is most potent: Take of Strychnia one-sixteenth of a grain, Cantharides one-eighth of a grain, Powdered Arnica leaves from three to five grains; mix for a dose. Three of these powders may be given in the course of every twenty-four hours. Great care and watchfulness is requisite in the administration of this mixture, as it will be found that the strychnia will produce an active influence on some persons, requiring a diminution of its quantity in each dose, or its entire suspension. I have frequently met with patients in whom the one-fiftieth of a grain of Strychnia caused symptoms manifesting its presence in a very decided manner. Another very valuable mixture, useful in paralysis, as well as neuralgia of the bladder, is composed as follows: Take of Strychnia one-sixteenth of a grain, Extract of Aconite, Extract of Hyoseyamus, each, half a grain, Sulphate of Quinia two grains; mix, and form into a pill. One of these pills is a dose, to be repeated two or three times in every twenty-four hours. Another excellent pill is composed of Eupurpurin two scruples, Xanthoxylin one scruple, Strychnia one grain; mix well together, and divide into twenty pills, of which one may be given two or three times a day.

When the paralysis of the bladder is merely temporary, and in connection with debility caused by fevers, &c., the Tincture of Muriate of Iron in doses of ten drops every hour or two, may be exhibited in an infusion of Uva Ursi, Queen of the Meadow, Spearmint, or Trailing Arbutus; and one of

these infusions may be drank freely. Oil of Turpentine, in doses of twenty drops three times a day, has been recommended in these cases. When there is a retention of urine during an attack of hysteria, the catheter should not be used, though its use may be threatened in the hearing of the patient; a cold douche to the genital parts will answer a much better purpose.

Strangury will generally be overcome by warm hip-baths, warm fomentations, and a free use of cooling and mucilaginous diuretics, as infusions of Watermelon seeds, Pumpkin seeds, Marshmallow, Cleavers, Parsley, &c. Retention of urine in infants and children may be cured in most cases by the warm bath, application of powdered Garlics or Onions over the region of the bladder, and the use of Sweet Spirits of Nitre, in appropriate doses, in some one of the above-named diuretic infusions.

In ordinary urinary difficulties where the urine is high-colored, scalding, or in diminished quantity, one of the following remedies may be used with advantage: 1. Compound Infusion of Trailing Arbutus; 2. Compound Pills of Soap; 3. Cold Infusion of Sickel grass, or Cleavers; 4. Oil of Pumpkin seeds, six to twelve drops, four or five times a day, &c.

INCONTINENCE OF URINE.

INCONTINENCE of Urine, or Enuresis, is a disease common to children, in which they involuntarily discharge their urine, especially at night. Sometimes instances are met with in which the child has no ability whatever to retain the urine, which is more or less constantly escaping from it. This difficulty is occasionally met with among adults, especially those advanced in life.

CAUSES. Incontinence of urine may be owing to distension of the bladder, with great irritability; to paralysis of the bladder, as is frequently the case among the aged; to enlargement of the prostate gland; to injury of the spinal nerves; to mechanical pressure, as from tumors, pregnancy, &c.; to masturbation; and to the presence of foreign bodies in the bladder, as gravel, and which is frequently met with among rheumatic and gouty persons.

TREATMENT. In those cases in which the incontinence is owing to irritation of the bladder, the cause of the irritation will have to be removed before any permanent benefit can be expected. Much relief, however, may be derived from the following pleasant remedy, and among children it will frequently effect cures: Take of Isinglass (*long staple*) one roll; boil it in one pint of water until it is dissolved; then strain, and add one pint of sweet milk, put it again over the fire, and let it "just boil up," then sweeten with loaf sugar, and grate nutmeg upon it. When properly made, it resembles custard. An adult may take of this a tumblerful three or four times a day. The Compound Infusion of Trailing Arbutus will frequently overcome irritation; and, in some instances, among adults, the following mixture: Take of Tincture of Cantharides, Tincture of Digitalis, Tincture of Colchicum seed, each, one fluidounce, Tincture of Lupulin one fluidounce and a half; mix. The dose is twenty or thirty drops, three or four times a day.

When the disease is connected with irritation of the spinal nerves, the back may be douched with cold water twice a day, counter-irritation should also be applied along the spinal column, as, firing, and the electro-magnetic current may be passed through the bladder and along the spinal column, daily. In some cases the Compound Tar plaster upon the back, over the tender parts, will be useful.

When the incontinence is owing to debility or relaxation of the bladder, the Compound Infusion of Trailing Arbutus may be given, in connexion with the free use of a strong infusion of equal parts of Beth root, Bayberry bark, and Wild Cherry bark. In these cases of want of tone in the bladder, the following preparations have been used with advantage: 1. Take of Tincture of Acetate of Iron, Tincture of Nux Vomica, each, equal parts; mix. The dose is ten or fifteen drops, to be repeated twice each evening, at intervals of two or three hours. 2. Take of Black Oxide of Iron forty-eight grains, Extract of Nux Vomica one grain; mix, and divide into twenty-four powders, of which one may be given every night and morning. 3. Take of Tincture of Muriate of Iron two fluidrachms, Balsam Copaiba one fluidrachm, Tincture of Strychnia one grain, Infusion of Quassia twelve fluid-ounces; mix, and administer a fluidounce three times a day.

Incontinence in children is often the result of habit or carelessness in not being made to urinate immediately before going to bed; it will, therefore, be necessary to attend to this, and also to awaken the child at certain periods through the night, for the purpose of emptying the bladder. In some cases it may be found that the urine is passed during sleep while in one particular position, as, for instance, on the back—by changing this position, some benefit may, at times, result.

Where children are in the habit of taking suppers very little fluid should be allowed them, and tea and coffee must be abstained from, even for some time after a cure has been effected. The diet should be principally boiled milk and wheat flour, with a little Cinnamon or Nutmeg sprinkled on it; or the above Isinglass Custard may be used every day. In most cases a stimulating strengthening plaster worn on the lower half of the back will be found a valuable auxiliary. In cases where no relief can be obtained, contrivances must be resorted to prevent the constant discharge of urine, and to protect the neighboring parts from being excoriated by contact with it.

GRAVEL.

THE waste or disintegrated portions of the tissues of the system are, to a great extent, carried off in a soluble state in the urine, under the form of several acids, alkalis, calcareous earth, and other substances; but from irregularities in diet, or from actual disease, one or more of these matters may exist in excess, and will be deposited at the bottom of the urine voided, after it has stood for a short time. Occasionally, however, the accumulation of these matters becomes so great that the deposit occurs in the kidneys or some part of the urinary organs, from whence it passes into the bladder, thus giving rise to gravel. In perfect health no deposit is found in the urine, until it has undergone decomposition. (See Fig. 29.)

Healthy urine is of a light amber color, transparent, reddens litmus paper, has an aromatic, violet-like odor, a saline, bitter, and rather disagreeable taste, a temperature on being passed varying from 92° to 100° Fahrenheit, and a specific gravity from 1.003 to 1.030. From twenty to fifty ounces is passed in twenty-four hours, holding 600 or 700 grains of solid matter in solution, and averaging in specific gravity from 1.015 to 1.020. That which is passed after drinking much water or other fluid, is usually pale, of specific gravity 1.003 to 1.009, and is called *urina potus*; that which is passed after the digestion of a full meal, *urina chyli*, has a specific gravity 1.030; and that which is passed after a night's rest, *urina sanguinis*, furnishes the best specimen of the average density of the whole

urine, varying from 1.015 to 1.025. The urine of infants is inodorous, colorless, of low specific gravity, and but little reaction on litmus paper. In the examination of urine the different specimens passed at various periods of the day, should be tested both singly and combined, their color, opacity, transparency, &c., should be noted, and that recently discharged should be examined, as well as after it has stood for twelve or twenty-four hours.

Urea is a healthy constituent of urine, it is neither acid nor alkaline, and is formed by the oxygenization of Uric Acid. When Nitric or Oxalic Acid is added to urine containing urea, the Nitrate or Oxalate separates in the crystalline form. (See Fig. 32.)

When there is *an excess* of urea, owing to too great a degree of oxygenization of Uric Acid, we usually find it be associated with dyspeptic affections, disorder of the functions of the skin, in plethoric conditions, &c. The urine is generally clear and free from sediments, and has a high specific gravity, 1.020 to 1.030. It is usually *deficient* in Bright's disease, hepatic dropsy, cirrhosis, anemic conditions, and various chronic and nervous diseases; the quantity of urine is considerably augmented, and its specific gravity ranges between 1.001 and 1.008. Urine generally contains Chloride of Soda, which on evaporation forms crosslets or daggers when urea is present. (See *a*, Fig. 31.)

In the treatment of cases where urea is in *excess*, the bowels must be kept regular, the functions of the skin maintained in as healthy a condition as possible by bathing, frictions, and diaphoretics; vegetable and chalybeate tonics may be given; moderate exercise should be taken daily; and the diet should be light, consisting of poultry, fish, vegetables, and as a drink, wine or beer. When urea is *deficient*, the skin must have particular attention paid to it; medicines to influence the liver and kidneys must be given; the bowels must be kept regular, with vegetable tonics and a good nourishing diet.

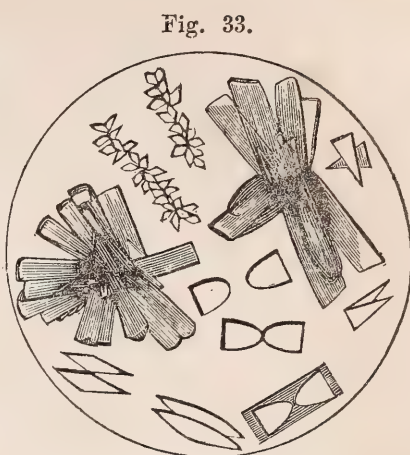
SYMPTOMS. Persons laboring under gravel are frequently attacked with such acute pain, as the calculus passes from the kidney to the bladder, as to occasion fainting, and even convulsions; relief, however, is frequently afforded by the use of opium and the warm bath, in such cases. There is a severe and permanent pain in the region of the kidney, extending down to the groin and upper part of the thigh, with a numbness on the parts of the affected side, and a violent drawing up of the corresponding testicle; the pain is periodically excessively severe, causing sickness and even vomiting. There is often a degree of irritation at the neck of the bladder, which may extend along the urethral canal, with a constant disposition to urinate. When the stone reaches the bladder, these symptoms disappear, to return on the formation and passage of another.

Sometimes the only symptom observed will be the passage of sand or gravel with the urine, the gravel being formed in the bladder, or, if in the kidneys, being so small as to readily pass through the ureters. When the gravelly deposits are not expelled with the urine, they form layers upon each other and develop a *stone* or calculus in the bladder, which sooner or later gives rise to severe suffering, and ultimately terminates in the death of the patient, unless it be removed by a successful surgical operation.

As the character of the deposits, met with in urine, differ materially from each other, and as their treatment also varies according to the character of the deposit, each one will be considered under a distinct head, that no confusion may exist relative thereto in the mind of the reader.

URIC, OR LITHIC ACID GRAVEL.

IN the urine of persons who have the Uric Acid Gravel, after it has become cool, will be found dirty-white, yellow, pink, or red deposits, which adhere to the sides of the vessel, forming incrustations if permitted to remain, and in which the microscope will expose to view crystals of Uric Acid. Sometimes pure Uric Acid passes with the urine in the shape of fine sand, or even in large crystals, and which constitutes true Uric Acid Gravel. The urine itself is usually scanty, much higher-colored than natural, somewhat of the color of brown Sherry, and is highly acid, giving to litmus paper a deeper shade of red than healthy urine. Uric acid is very soluble in Liquor Potassa, from which it may be precipitated by Nitric or Muriatic Acids. It is also soluble in an excess of Nitric Acid, by means of heat, dissolving with effervescence, and leaving a pink residue when the solution is evaporated. Concentrated Sulphuric Acid dissolves it, from which solution water precipitates it. It is insoluble in water, Ether, Alcohol, and Acetic, Nitric, and Muriatic Acids. Exposed to the heat of the blowpipe it evolves an odor of Bitter Almonds, and leaves a small quantity of white ashes. (See Figs. 21, 23, 26, and 33.)



Varieties of Uric Acid Crystals.

CAUSES. Uric Acid is the result of the decomposition or destruction of the tissues of the human body; a large amount of effete nitrogen is eliminated from the system under this form; it is usually converted into soluble urea by the action of oxygen, and when the oxygenization is deficient, Uric Acid will be found in the urine in excess. It is generally present in inflammatory conditions, gouty and rheumatic diseases, disordered conditions of the skin, some dyspeptic affections, febrile diseases, diseases of the reproductive organs, injuries or excessive straining of the loins, and several complaints of a chronic nature, particularly when associated with great weakness and emaciation; it is also common among the intemperate in alcoholic drinks and meats. Persons who indulge in lying long in bed, who have a habit of retaining the urine in the bladder for a long time, who are exposed more or less continually to changes of temperature, or who use much animal food with but little exercise, are very apt to have this form of gravel.

TREATMENT. In the treatment of Uric Acid Gravel, the bowels should be kept regular every day by means of the mixture of Rhubarb and Bicarbonate of Potassa, mentioned under Costiveness, on page 426, and occasionally Magnesia may be substituted for a few days. Especial attention must be paid to the functions of the skin by frequent bathings and frictions; moderate exercise should be taken daily, and the diet should be nutritious, partaking sparingly of animal food, and avoiding all indigestible articles, or articles which will acidify upon the stomach, no wine, beer, or other alcoholic drinks must be used. Fruits which contain Acetic, Citric, or Tartaric Acid, in combination with Potassa, may be eaten in moderation.

As a medicine, the Compound Infusion of Trailing Arbutus will, probably, be found one of the best agents for the removal of this kind of gravel, yet offered to the profession. It should be taken daily, in wineglassful doses, three, four, or five times a day, and its use persisted in until a complete cure is effected. Where the patient is of an anemic habit, some preparation of

iron may also be given. In some cases, where other diseases are associated with the gravel, Colchicum, vegetable tonics, alteratives, or other agents will be required, according to the nature of the complication.

As *solvents* to hold the Uric Acid in solution in the urine, the following agents have been recommended: Carbonates of Soda or Potassa, in doses varying from ten to thirty grains, and repeated two or three times a day; these alkalies should not be given too long, nor in too large doses—and care should be taken not to destroy the acidity of the urine entirely, as a new form of gravel, phosphatic, may be thereby occasioned. Phosphate of Soda and Benzoic Acid have likewise been found useful; likewise Borax, but this last is improper for females as it is apt to cause abortion or some menstrual derangement. Among the agents which have been successfully used in Uric Acid Gravel may be named the Compound Pills of Soap; cold infusion of Cleavers, Broad-leafed Cactus, and Sickleweed; infusion of Wild Carrot root; syrup of Appletree bark; and Oil of Pumpkin seed ten drops every three hours.

PHOSPHATIC GRAVEL.

WHEN the earthy phosphates exist in the urine in excess, this fluid will be found to vary much both in its color and specific gravity. More commonly it is pale, frequently white like whey; sometimes dark-brown, or greenish-brown; very offensive; usually alkaline, with a dense, tough, stringy mucus, and often stained with blood. Occasionally it may be somewhat acid immediately after leaving the bladder, but speedily assumes a neutral, or alkaline character. When pale its specific gravity varies from 1.005 to 1.014; when of an amber hue with urea in excess, it varies from 1.020 to 1.030. The phosphatic depositions generally occur in the form of white sand or gravel, which may be amorphous or crystallized. When amorphous it is commonly a *Phosphate of Lime*, (See Fig. 28,) which is white, not dissolved by Liquor Potassa, the urine being opaque, and of high specific gravity; it is more frequently met with among aged persons, and is indicative of disease of the bladder, prostate gland, or both, of a dangerous character.

When the deposits are crystalline, they are composed of minute shining crystals of a triple salt, the Phosphate of Ammonia and Magnesia, which may assume various forms under the microscope, as seen in Figs. 22 and 28. Sometimes the amorphous and crystalline sediments are met with together, forming what is termed mixed or fusible phosphates; the urine containing them is of low specific gravity, more or less opaque, of an alkaline character, and becomes speedily offensive; on standing, it deposits Phosphate of Lime, mucus, and a trace or more of Amorphous Carbonates; the triple Phosphate is not deposited, but remains dissolved in the urine, from which it may be precipitated by adding an excess of Aqua Ammonia. The calculus formed from this combination is white, friable, similar to lime, dissolves readily in Muriatic Acid, and melts in the flame of the blowpipe. Nitric Acid, or Muriatic Acid, dissolves the Phosphates; but the Alkaline Carbonates, or Potassa, or Ammonia, in solution, do not affect them. The triple Phosphates are more usually observed among young persons.

CAUSES. Excess of Phosphatic deposits in the urine, accompanies a debilitated condition of the system, and may be owing to injuries of the back or spine; to dyspepsia; mal-assimilation of food; innutritious food; irritability, or exhaustion of the nervous system; sedentary habits; excessive mental exertion; general weakness of the system; some organic disease of the kidneys; or diseased mucous membrane of the bladder, &c.

TREATMENT. There is no agent with which I am acquainted, which exerts such a prompt and permanent influence in removing the white or phosphatic gravel, as the Compound Balsam of Sulphur. The Compound Infusion of Trailing Arbutus has frequently proved efficacious, and may be used when the other cannot be obtained, but it is inferior in efficacy. In addition to these means, others must be employed, according to the character of the symptoms present. As in the other instances, the bowels must be kept regular, the functions of the skin attended to by bathing and friction, with moderate exercise. Vegetable tonics may be exhibited, or alteratives if indicated; any derangement of the liver must be removed by appropriate remedies; anodynes, as the Compound Powder of Ipecacuanha and Opium, may be administered to allay any general or local irritation; the body must be kept warmly clad; and the diet must be generous, avoiding, however, all greasy food. Syrup, or sugar, used at meal time, has frequently been found to prevent a phosphatic deposition in the urine. Traveling and change of scenery, will always be of service. In those cases, where there is a discharge of white, long, tough ropes of puriform mucus with the urine, an infusion of Golden Seal may be injected into the bladder, two or three times a day. Infusions of Buchu, or Pareira Brava, are sometimes useful, especially when pus is present; when a ropy mucus is found to exist, Oil of Turpentine, Copaiba, or Cubebs, have occasionally proved advantageous. The Fluid Extract of Hydrangea Arborescens is very useful in phosphatic deposits, and alkaline urine, in chronic gleet, and mucous irritations of the bladder in aged persons.

The above two forms of gravel, uric and phosphatic, frequently *alternate* with each other, so that the treatment required must vary according to the character of the deposit prevailing at the time.

OXALIC GRAVEL.

Fig. 34.



a. Dumb-bells—Oxalurate of Lime.
b. Oval forms of Oxalurate of Lime.

THIS form of gravel or calculi, is occasioned by the presence of oxalate of lime in the urine, in the form of octohedral crystals, or dumb-bells, (see Figs. 24, 25, and 34;) when they form large calculi, they are usually of a deep brown or black color, with a rough, tuberculated surface, which has caused them to be named "mulberry calculi." The urine is generally clear and bright, of a dark, amber color, of acid reaction, occasionally neutral or alkaline, and of specific gravity varying from 1.015 to 1.025; in a majority of instances, urea will be present in excess. Epithelial cells are very common in urine containing oxalate of lime, (see Figs. 15, 16, 17;) and should there be considerable urate of ammonia, the urine will frequently become

thick or jelly-like when exposed to the action of heat. It will frequently be the case, when oxalate of lime and urate of ammonia are combined in a deposit, that the former cannot be seen under the microscope until the latter have been dissolved, which may be accomplished by adding a drop of Liquor Potassa to the drop of urine on the glass slide.

When the urine presents a greenish hue in oxalate of lime formations, the coloring principle of blood is mixed with it; and when quite pale, more so than is natural, it is commonly of diminished specific gravity; the odor is generally urinary, occasionally resembling that of mignonette. It is by no means uncommon to observe an excess of phosphates with the oxalate of lime deposit.

Oxalate of lime is not dissolved by water, Liquor Potassa, or Acetic Acid; Nitric and Muriatic Acids dissolve it without causing effervescence; in the flame of the blowpipe, it is changed into carbonate of lime, and if the heat be raised and kept up for a length of time, the Carbonic Acid will be driven off, and caustic lime be left. The dumb-bell deposits are slowly converted into octohedral crystals, when preserved for a long time in liquid.

CAUSES. Oxalate deposits are supposed to be the result of an imperfect oxygenization, and a want of proper assimilation of food during the digestive process. They are usually associated with functional disease of the organs of digestion of a grave nature; great prostration of the vital powers; mental depression; irritable temper; mental or physical inactivity; fondness for solitude; masturbation; partial or complete impotency; pain or distress about the small of the back and loins; debaucheries; irritable bladder; habitual debility, &c. Severe injuries across the back or loins, intemperance, venereal excesses, forcible or improper attempts at passing a catheter into the bladder, extravagant use of the rhubarb plant in pies, &c., may likewise give rise to these deposits. When the bladder is diseased, or when a stone is lodged in it, the urine will generally be either neutral or alkaline.

TREATMENT. The treatment in oxalic gravel must be principally addressed to the digestive organs and of a tonic character. Nitro-muriatic Acid, composed of two parts of Nitric Acid and one of Muriatic, may be given in some vegetable tonic infusion, and continued until the deposits have changed to Uric Acid, or Urate of Ammonia, when its use must be suspended until the oxalate crystals reappear, when it must be again administered; this course must be pursued, in conjunction with the other measures, until a cure is effected. About five or six drops of Nitro-muriatic Acid may be given every four or five hours in half a table-spoonful of infusion of Colombo, or Golden Seal, the whole being added to a wineglassful of water. In connection with this, a pill composed of Aletridin one grain, Hydrastin one grain, and Extract of Nux Vomica one-twentieth of a grain, may be given, repeating it three times every day. And any peculiar dyspeptic symptoms which may be present, will require to be treated according to their indications. The bowels should be kept regular, if necessary, by small doses of Podophyllin, triturated with common Salt. The skin must not be neglected, the whole surface should be sponged every morning with cold or tepid water, and in drying considerable friction should be used; a Spirit vapor bath every two or three weeks will be of much benefit. If the patient be anemic, some preparation of Iron may be substituted for the Nitro-muriatic Acid, as the Tincture of Muriate of Iron, which may be used in doses of ten drops every three hours in the above vegetable tonic infusion; or the Ammonia-tartrate of Iron may be administered in doses of five or ten grains every three or four hours. A plain but nutritious diet must be used, always masticating the food thoroughly; all spirituous or fermented liquors must be avoided, also all food which contains Oxalic Acid, as sorrel, rhubarb plant, salads, onions, &c. Sugar and all saccharine substances should also be prohibited as a diet, as well as pickles, and fat or greasy articles; hard water, which contains lime, is exceedingly improper; pure, free-

stone, rain, or distilled water being alone proper for drink. Moderate exercise in the open air, avoiding fatigue, however, should be taken every day; and sexual excesses, indolence, excessive study, and every thing calculated to depress the nervous system or impair the digestive organs, should be studiously abstained from. When the oxalate deposits have disappeared, and Uric Acid or Urate of Ammonia exists, it will be proper to omit the Nitro-muriatic Acid, and administer instead the Tincture of Colchicum seed, in doses of ten or fifteen drops in a little water, three times a day; at the same time, continuing the tonic treatment,—returning to the mineral acid as soon as the oxalic deposits reappear.

URATE OF AMMONIA DEPOSITS.

Fig. 35.



a. Rare forms of Urate of Ammonia, the spicula being, probably, Uric Acid; occasionally observed in albuminous urine, and occurring in dropsy after scarlatina.

b. Urate of Soda, usual forms in urinary deposits.

It may be proper to notice a few other deposits met with in urine, and refer briefly to their treatment. Among these, the most common is the Lithate, or Urate of Ammonia. (See Figs. 27 and 35.) This deposit presents various colors, from white to reddish-purple, or pink, and is a very soluble urate. When there is a considerable quantity of this urate in the urine, it will present various characters. Commonly, the urine is very high-colored, thick, muddy, and somewhat acid, of the specific gravity of 1.025, and deposits, on cooling, a reddish-brown, or brick-red sediment. When the urine is pale, but becomes opaque on standing for a short time, its specific gravity is usually 1.012; when it has a pale amber hue, with a copious chestnut or liver-colored sediment on standing, its specific gravity is generally 1.018. Sometimes, urine containing an excess of Urate of

Ammonia will be met with of an alkaline reaction, or neutral.

Urate of Ammonia when precipitated from urine, may be redissolved by heating this fluid, but it will be deposited again as soon as it cools; solutions of alkalis likewise dissolve it. If Potassa be added to the urine and heat applied, the vapors which escape, will have the odor of Ammonia. If Muriatic Acid be added to urine containing Urate of Ammonia, the acid will combine with the Ammonia, forming Muriate of Ammonia in solution, while, at the same time, crystals of the liberated Uric Acid will be deposited.

Urate of Soda, (see Fig. 35,) is occasionally met with in the urine, its chemical reactions are similar to those of Urate of Ammonia, with the exception of not giving an odor of Ammonia when heated with Potassa.

When these urates are present in excess, it is generally owing to some derangement of the functions of the skin, or to intemperance in eating or drinking, and may be found associated with the same forms of disease as named under Uric Acid. When they are present to such an extent as to be precipitated in the bladder before the urine has been evacuated, it is an indication of a more serious difficulty.

TREATMENT. This will be the same as advised in Uric Acid Deposits, on page 445.

Fig. 36.



- a.* Ordinary forms of Hippuric Acid when Benzoic Acid is administered.
b. Different forms of Hippuric Acid in healthy urine.

Fig. 37.



- a.* Crystals of Hippuric Acid evaporated from an Alcoholic solution.
b. Crystals of Hippuric Acid after the action of Muriatic Acid on the urine containing it in excess.
c. Crystals of Hippuric Acid in needle-like tufts.

Fig. 38.



- a.* Cystine as an urinary deposit.
b. Cystine, crystallized from an Ammoniacal solution.

HIPPURIC ACID DEPOSITS.

WHEN Benzoic Acid, or articles containing it, are administered internally, it undergoes decomposition, and is converted into Hippuric Acid, which may be observed in the urine. This acid is likewise a healthy constituent of the urine of the cow and horse.

Human urine in which Hippuric Acid exists, is slightly acid, with a whey-like odor, and a specific gravity varying from 1.006 to 1.008. It is sometimes neutral, or even alkaline, and frequently deposits the crystalline triple Phosphates. It may be procured by evaporating the urine containing it until it is quite thick, and then adding about half the bulk of Muriatic Acid; on letting this stand for a few hours, a sediment will be precipitated, which must be boiled in Alcohol, then filtered, and evaporated to dryness. It forms long, narrow, four-sided prismatic crystals, (see Figs. 36 and 37,) which are very readily dissolved in boiling water, or Alcohol, and but slightly so in cold water, or Ether. Muriatic Acid dissolves it without decomposing it. Nitric Acid changes it into Benzoic Acid. Its taste is bitter, and when exposed to a powerful heat, it melts, and forms an oily substance of a reddish color, and an odor very similar to that of the Tonka bean. Its presence in the urine of man, is attributed to want of nitrogenous diet, or derangement of the lungs, liver, or skin.

TREATMENT. This consists in an attention to the skin; regularity of bowels; exercise; pure air; nitrogenous diet, and the use of some preparation of Iron.

CYSTINE DEPOSITS.

DEPOSITS of Cystine are occasionally met with. The urine containing it is generally paler than the urine of health, sometimes presents an oily appearance, and not unfrequently has a greenish color. It is ordinarily neutral, but when it is acid on being passed it speedily becomes alkaline. It usually has a low specific gravity, an odor like that of Sweet Briar, with a deficiency of Urea and Uric Acid. On cooling, crystals of cystine and triple phosphate will be seen floating on its surface.

Cystine may be precipitated from its solu-

tion in Ammonia, or from urine containing it, by the addition of Acetic Acid. It forms crystalline plates of many angles, or rosettes with sharply indented margins, which are less transparent in the center than around the borders; sometimes the plates are four-sided, at others six. A deposit of cystine is of a white or pale chestnut color; dissolves in the caustic alkalies, as Soda, Potassa, and Ammonia, as well as in the carbonates of the first two; is slowly dissolved by Oxalic, Muriatic, Nitric, Phosphoric, or Sulphuric Acid; and is not dissolved by Citric, Tartaric, or Acetic Acid, Alcohol, and the Carbonate of Ammonia. When allowed to evaporate spontaneously from its solution in Ammonia, it forms six-sided plates. Upon boiling it in a solution of Potassa, and adding Acetate of Lead to it, a black precipitate ensues; owing to the Sulphur it contains — about one-fourth its weight. On burning it, a disagreeable smell is produced, and the flame is of a greenish-blue color. They somewhat resemble the crystals of Chloride of Sodium, or Salt, (see Fig. 31,) but may be distinguished by being dissolved more slowly in water, and by not vanishing on exposing the urine to heat.

The origin of cystine in the urine, is a matter of conjecture; it is supposed to be owing to a perverted assimilation of the albuminous and gelatinous tissues; imperfect secretion of bile; deficient oxygenization; scrofula; fatty liver; and oxidation of the tissues, as in chlorosis.

The *treatment* which has been found to answer the best purpose in diseases developing cystine in the urine, is a tonic and alterative one, as the use of preparations of Iron; Iodine; Iodide of Iron; Nitro-muriatic Acid, &c., with medicines to act upon the liver, as Podophyllin, Leptandrin, &c.; aided by bathings and frictions to the surface; regularity of bowels; daily exercise; nourishing and digestible food, and the judicious use of Wine or Brandy.

When the causes of the above deposits in the urine are not removed by appropriate treatment, and especially when these have been permitted to remain in the bladder, they increase in size by the formation of new layers, become adherent, and form a calculus or **STONE**, of a size which cannot be expelled through the urethra, and which can only be removed by a surgical operation.

HEMORRHAGE, OR INVOLUNTARY DISCHARGES OF BLOOD.

By Hemorrhage is meant any discharge of blood from the blood-vessels, whether in small or large quantity: some of these discharges are natural, as, for instance, that of menstruation, and they become hemorrhages, pathologically, when they are too profuse, or exceed the usual amount. Hemorrhages are divided into active and passive. Active hemorrhage occurs chiefly in the young and plethoric, and the blood evacuated is generally of a bright red color. Passive hemorrhage is the more serious form, it usually occurs in those of weak constitutions from disease or otherwise, and the blood discharged is of a dark color.

Under the microscope, blood is found to contain red and white globules, and globulin. The red globules are circular, flattened, biconcave bodies, being thinner in the center than at the edges, and presenting consequently an apparent but not real nucleus; when seen by reflected light, they are red; when by transmitted, they are yellowish. (See Fig. 12.) They are about the 1.5000th of an inch in diameter, and have a tendency to turn

upon their edges, and to arrange themselves into rolls like rouleaux of coin. The white globules are much less numerous, and of larger diameter than the red, being about 1.2000th of an inch in diameter, are round, not colored, and have no central nucleus, but contain granulations on their surface.

When it is desirable to discover whether a certain stain consists of blood, it must first be moistened with the white of egg, then scraped off the material holding it, and examined under the microscope with a quarter of an inch object glass; if the stain consists of blood, blood-corpuscles will be rendered distinctly visible.

The treatment of Menorrhagia, or Excessive Menstruation, will be found among the Diseases of Women, which see.

HEMORRHAGE FROM THE NOSE.

EPISTAXIS, or Hemorrhage from the Nose, is frequently met with in practice, and may occur at any period of life, more particularly among young persons. When it happens among those somewhat advanced in life, being profuse and frequent, it is indicative of an approaching apoplexy, palsy, or other serious attack.

SYMPTOMS. A bleeding from the nose may come on suddenly without any previous warning: or it may be preceded by heat and itching in the nostrils, pain and weight in the head, giddiness, ringing in the ears, flushed countenance, and throbbing of the temporal arteries: though it must be recollected that pale and delicate persons are more apt to be afflicted with this hemorrhage. Some persons suffer from cold feet, costiveness, and slight chilliness. Ordinarily, the blood flows from one nostril only: but in serious cases, it may be discharged from both. In some cases, but a few drops escape, in others the flow may be profuse, and even continue for several days: and its periods of return will vary from every twenty-four hours, to several weeks, months, or even years.

CAUSES. Epistaxis may be induced by any circumstance which will derange the circulation, and determine an undue amount of blood to the head, as active or laborious exercise, fatigue, application of cold to the feet, sneezing, long-continued study, exposure, to the direct rays of the sun, over-eating, violent coughing, fits of passion, intemperance, any thing tight around the neck, sudden or long-continued stooping, &c. It may likewise be occasioned by injuries, as falls, blows, irritating particles inhaled into the nostrils, picking the nose and abrading the delicate membrane which lines the internal surface of the nostrils, &c. Among scrofulous persons, the bleeding will frequently be owing to an abrasion or ulceration of this membrane.

Nose bleeding occurs at times as a critical discharge, as in apoplexy, commencing fevers, &c., in which cases it may prove salutary, and should not be checked too suddenly, unless very profuse. When it happens during the latter part of acute diseases, in scurvy, anemia, jaundice, &c., it is apt to prove troublesome and even serious.

TREATMENT. Generally, bleeding from the nose demands but little medical attention; occasionally, however, it becomes very profuse and repeated, when it should be checked by prompt measures. In these instances, the bowels should be kept regular, the surface of the body should be bathed daily, and a pitcher of cold water may be poured on the back of the head and spinal column every morning, or a cold shower-bath may be substituted, drying at once with considerable friction. All ligatures, cravats, &c., around the neck, limbs or body, must be removed or loosened, and during the bleed-

ing, the patient should keep quiet, and in a sitting posture. In severe cases it will also be proper to bathe the feet in warm water every night previous to getting into bed. If the patient be anemic, small doses of some preparation of iron should be administered. Moderate exercise is proper, but fatigue must be avoided; the hours of sleep must be regulated; and the diet must be plain, nutritious, and easily digestible, partaking of it in moderation.

Among the many means found successful in checking ordinary epistaxis, may be named, cold applications to the forehead, nose, and nape of the neck; external pressure upon the nose as high up as the lower extremity of the bones of the nose, and which pressure should be sufficiently firm to close the passage, continuing it for some time; plugging the nostrils with grated dried beef, or with lint or cotton moistened with some astringent, as, an infusion of Geranium, or Marsh-rosemary, or a solution of Sulphate of Zinc, &c.; holding up both arms above the head in a vertical direction, for a length of time, &c. When the hemorrhage is severe and protracted, and cannot be checked by any of the means named, a piece of soft, dry sponge, or lint, by means of a string fastened to it, passed through the nostril, and drawn out through the mouth, is introduced into the nostril until it presses against the bleeding vessels, where it is allowed to remain until the discharge has permanently ceased. Other agents, upon a similar principle, have been passed into the nose with good results, as, a small bladder, portion of the intestine of a pig, &c. And it will always be proper to aid these measures by means calculated to divert the circulation to the extremities, as purgation, bathing the feet in warm Mustard water, and the application of cold to the head.

When the bleeding is connected with fevers, scurvy, jaundice, &c., there will commonly be an unhealthy condition of the blood, which must be removed, if possible, by appropriate remedies in connection with the local means just advised. Oil of Turpentine, Tannic Acid, preparations of Iron, and alterative remedies, are among the means suited to effect a healthy change in the blood; depending, however, upon the peculiar character of the disease to which the bleeding is due.

HEMORRHAGE FROM THE LUNGS.

HEMOPTYSIS, or Hemorrhage from the Lungs, is a discharge of blood of a florid color, and often frothy, which is brought up from the lungs or wind-pipe with more or less hawking or coughing. It may occur at any period of life, but is more commonly met with between the ages of eighteen and twenty-five.

SYMPTOMS. Bleeding from the lungs is most commonly preceded by a sense of weight and pains about the breast, anxiety, a greater or less difficulty of breathing, and sometimes a considerable degree of warmth under the breast-bone, which shifts around, and very frequently a saltish taste will be experienced shortly before the bleeding occurs. The bleeding may be ushered in with shiverings, weariness of the extremities, pains in the back and head, costiveness, flatulence, and a rapid, full pulse; or it may commence with a tickling sensation at the upper part of the windpipe, occasioning a slight hawking or cough. The amount discharged varies, being sometimes so small as merely to speckle the mucus expectorated, and at others so profuse as to produce sudden and alarming debility, and even a hasty death; and it may appear daily, or even continue without cessation for many days together; or, it may happen only once or twice during a lifetime. It is occasionally so profuse as to be ejected through the nose as well as the mouth.

The blood is usually very thin and of a florid red color, but it may be thick, and of a dark or blackish cast, as in cases when it has remained for some time in the lungs previous to its being coughed up.

CAUSES. Bleeding from the lungs or bronchial vessels may occur from rupture of bloodvessels of the parts, or from the escape of blood by exudation or exhalation. The exciting causes are severe exercise; injuries to the chest; violent straining; improper exercise of the lungs in singing or speaking, &c.; a decrease in the weight of the atmosphere; inhalation of irritating substances; suppression of accustomed evacuations; mal-formation of the chest; organic diseases of the heart; tuberculous disease of the lungs, &c. It is not apt to be dangerous, or of an alarming character, unless it occurs in persons with narrow chests, round shoulders, and in whom there is a tendency to consumption as manifested by cough, pains in the chest, and difficult breathing. When it occurs in slight quantity toward the termination of pleurisy, inflammation of the lungs, small pox, and some fevers, it is generally a favorable indication.

Hemoptysis may be distinguished from bleeding from the stomach, by the discharge of this last being in much larger quantity than that from the lungs, of a darker color, thicker, and often mixed with the contents of the stomach; the discharge from the lungs is hawked or coughed up, while that from the stomach is vomited up without cough or hawking.

TREATMENT. In cases of bleeding from the lungs the most perfect quiet must be enjoined, and the patient prohibited from talking, and requested to suppress cough as much as possible; he must be placed in a semi-recumbent position and the room should be well ventilated, allowing, in warm weather, the fresh air to blow upon his chest, or fanning him. A half teaspoonful of common table salt or of Spirits of Turpentine may be administered, and repeated every twenty or thirty minutes, until the bleeding is checked. Should the patient be uneasy and restless, and the discharge be large, a powder composed of Capsicum five grains, Ipecacuanha one grain, and Opium half a grain, may be given for a dose, repeating it every half-hour, hour, or two hours, according to its influence and the urgency of the case. At the same time, an astringent decoction of Black Cohosh root, Beth root, and Bugle weed, should be drank in doses of a wineglass half-full, every hour. The feet should be frequently bathed in warm Mustard water, and Mustard may be applied to them; and the legs should be well rubbed with some stimulating preparation. If the above astringent decoction cannot be obtained, a mixture of Tincture of Cinnamon, Tincture of Rhatany, Spirits of Turpentine, each, equal parts, may be given in some convenient vehicle, in doses of a half-teaspoonful or a teaspoonful, repeating it as often as required; this has frequently proved successful. Or, a mixture of equal parts of Tincture of Cinnamon, Tincture of Ergot, and Tannic Acid, will be found an excellent substitute in many cases; but this must not be used in cases where pregnancy is present. The Oil of Fleabane, or of Fireweed, in doses of from five to fifteen drops every half-hour or hour, mixed with some sugar, or even salt, and continued until the bleeding is arrested, will frequently prove very useful; in some cases, an equal quantity of Oil of Turpentine added to either of these oils, will improve their efficacy. Warren's Styptic Balsam, has also been highly recommended.

Should the bleeding be very profuse and alarming, in addition to the above measures, it will be proper to apply ligatures to the upper part of the arms and legs, near the body, being careful, however, not to tighten them so much as to interfere with the circulation in the arteries, but only that in the veins; and after the discharge has become arrested, gradually loosen and remove them.

When the bleeding occurs in a patient of full habit, much advantage will follow the operation of an active cathartic, as a full dose of the Compound Powder of Jalap, to which ten or fifteen grains of Cream of Tartar have been added. When the pulse is full and rapid, it may be reduced by the use of Tincture of Digitalis or Tincture of Sheep Laurel, in doses of ten or fifteen drops every hour or two; and if cough be present, the Tincture of Blood-root, an equal quantity, may be added to either of the previous Tinctures, and the mixture be given in sufficient doses to produce a very slight degree of nausea.

When persons of an enfeebled, anemic condition are attacked with hemoptysis, they must take a mild, nourishing diet, consisting principally of milk, eggs, oysters, gruel, panada, strong beef tea, &c., and in passive bleedings three or four grains of some preparation of iron should be used daily; being very careful, however, not to use iron in active hemorrhages, as it will increase the difficulty; they should exercise moderately in the open air, increasing the exercise as they gain in strength, and the exercise should be of a character especially to expand and strengthen the organs of the chest. Persons of full habit should confine themselves, for a time, to a bread and milk diet, and boiled green corn during its season; they should avoid all animal food, all liquors, tea and coffee, and every article of diet that is indigestible, flatulent, or stimulating; oranges, lemons, ripe acid fruits are very proper, and all drinks should be taken cold; moderate exercise in the open air, is also useful.

Those subject to bleeding from the lungs should keep their bowels regular, their digestive organs in a healthy condition, the surface clean and warm; should not indulge in singing, long and loud talking, or blowing on wind instruments; and should avoid elevated, cold situations, choosing a flat or low country where the air is heavy.

HEMORRHAGE FROM THE STOMACH.

HEMATEMESIS, Hemorrhage from the Stomach, or vomiting of blood, is a disease not very frequently met with, and is rarely so profuse as to destroy the patient suddenly.

SYMPTOMS. Bleeding from the stomach is usually preceded by a sense of weight and oppression in the stomach, nausea, appetite lost or voracious, flatulence, acid eructations, pain or uneasiness of the left side, sense of constriction across the chest, chilliness, contracted pulse, coldness of the extremities, pale face, palpitation of the heart, and anxiety; one or several of these symptoms are generally present. The blood is vomited up without coughing or hawking, is dark and clotted, frequently mixed with a portion of the contents of the stomach, and sometimes appears in the stools. The quantity raised is considerable, and may be discharged at short intervals, very much exhausting the patient. After the blood has been vomited, the patient is relieved from his previous disagreeable sensations. The pulse is generally depressed.

CAUSES. Bleeding from the stomach may be occasioned by anything that will derange the functions of the stomach, and it is frequently associated with diseases of the liver and spleen, and when this last is the case, it is an unfavorable indication. It may be occasioned by the abuse of emetics and cathartics; acrid substances taken into the stomach; blows, bruises; suppression of menstruation, or of the discharge from bleeding piles; intoxicating drinks; intemperance in eating and drinking; costiveness; violent and depressing passions, and it may occur toward the close of other diseases, as scarlatina, typhus, yellow fever, &c.

Its *discrimination* from hemoptysis has been already described in the preceding article; but, sometimes, a hemorrhage from the gums, mouth, or nostrils, may be mistaken for it, especially when the blood has been swallowed and subsequently vomited up, in such cases the usual symptoms attending hematemesis will be absent.

TREATMENT. The feet should be placed in warm mustard water, dried with considerable friction, and if necessary, mustard poultices should be applied to them. The patient should then be kept quiet and in a recumbent position. Dry cupping over the region of the stomach, followed by the application of a mustard poultice, will often be found beneficial. Internally, a half teaspoonful of salt may be given, or the Oil of Fleabane, or Fireweed, and repeated, as in bleeding of the lungs, (see page 454.) The Tincture of Muriate of Iron in doses of twenty drops, in some cold water, and repeated every hour or two, till the bleeding ceases, has acted with efficacy. If these fail, Warren's Styptic Balsam may be administered. A solution of the Peroxide of Iron has been used with great success. Small pieces of ice swallowed from time to time until the bleeding ceases, have frequently proved useful.

In addition to these measures, when there are evident accumulations in the bowels, a purgative must be administered as a fluidounce or two of Castor Oil with twenty or thirty drops of Oil of Turpentine, and which may be repeated in two or three hours, if necessary.

When there are accompanying derangements of the liver or spleen, as manifested by costiveness, sallow skin, yellowness of the eyes, &c., they must be treated as recommended for these affections on pages 296 and 299; and any other derangement must be treated as the nature of the case requires. Any acidity of stomach may be removed by doses of the Compound Powder of Rhubarb and Potassa.

If the hemorrhage occurs in the course of putrid diseases, as malignant scarlet fever, typhus, &c. Antiseptics must be used, as, Vinegar, Citric Acid, Lemonade, Sulphuric Acid diluted, Porter, Brown Stout, Champagne, Sparkling Catawba, Yeast, Chloride of Soda, and Chloride of Lime in solution, &c.,—together with means to strengthen the system.

When the bleeding from the stomach is owing to suppression of the menstrual or other habitual discharges, measures should be adopted to restore these discharges, before any permanent benefit can be expected.

During the discharge, gruel, rice or barley-water, may be allowed, but after its arrest, the diet must be more nutritious, as beef tea, buttermilk, toast-bread, custards, soft-boiled eggs, oysters, oyster soup, &c., and if there be very much debility, ale, porter and wine whey may be allowed, together with tonics, as for instance the Compound Wine of Comfrey.

HEMORRHAGE FROM THE BLADDER.

HEMATURIA, or Hemorrhage from the Bladder, means an evacuation of blood from the urinary passage, whether it originally proceeds from the kidneys, ureters, bladder, or urethra. Generally, it is not a painful nor serious disease, unless it be mixed with purulent matter, or where it occurs as symptomatic of some malignant or putrid malady.

SYMPTOMS. These will vary somewhat according to the part from which the blood emanates. There is, generally, in all cases, a sense of uneasiness or pain, which precedes and follows the discharge, and which appears to be located at the point whence the blood issues. If the seat of the hemorrhage be in the kidneys, the urine and blood, when passed, will resemble

bloody water; considerable heat and distress will be experienced in the loins, and pressure over the region of the kidneys, will produce more or less soreness; sometimes elongated masses of fibrin, like worms, will be seen in the urine. If the blood emanates from the ureters, or canals, which convey the urine from the kidneys to the bladder, there will be more or less pain along their tract, somewhat like that produced by the presence of a small stone passing toward the bladder; the urine passed will resemble that in the preceding case with more elongated clots. If the bladder be the seat of the hemorrhage, there will be a dull pain in the region of this organ, sometimes accompanied with painful erections and considerable heat in the glans penis; the blood does not mix intimately with the urine, but remains suspended in it, usually in small, flaky clots. Sometimes the clot formed in the bladder may prevent the urine from being passed, in which case the catheter will be required. When the urethra is the part from which the bleeding issues, it is voided either by drops, or in a small stream, and is not mixed with the urine. When the blood passed in the urine is mixed with mucus, and especially when pus is present, abrasion or ulceration must exist somewhere; if the blood be dark-colored, and mixed with putrid offensive matters, it is indicative of a malignant affection, and will prove fatal.

As in other hemorrhages, the quantity of blood will vary from a few drops to a quantity sufficient to jeopardize the patient's life. Sometimes it will flow freely without any unpleasant symptoms; and again there will be considerable difficulty in voiding it, with weight in the parts, pain, and other disagreeable symptoms.

The administration of several medicines, or use of certain articles of food, will frequently give a bloody aspect to the urine, as with cochineal, madder, red beets, &c.; it likewise has a dark-reddish color, with a dense deposit on standing, in several forms of disease. But we can always determine with certainty whether blood exists in the urine by a microscopic investigation. A drop of urine placed on a glass slide covered with thin glass, and then placed under a microscope of 300 or 350 diameters will show the blood globules as represented in Fig. 12, page 169; they will be entire, smooth, non-granular, flat, yellow, and either detached or adhering. Previous to the examination, the urine should be allowed to stand an hour or two so that the globules may settle at the bottom. Bloody urine stains linen of a red color; high-colored urine does not.

CAUSES. Voiding of bloody urine may be occasioned by many causes, as injuries from falls, blows, bruises, hard riding, jumping, lifting heavy weights, or other violent exertion; it may be produced by a stone lodged in the kidney or ureter; it may be occasioned by the long-continued or improper use of Spirits of Turpentine, or Cantharides; it sometimes occurs when the menses are suddenly suppressed, or, the discharge from bleeding piles; disease of the prostate gland often gives rise to it; and sometimes it takes place without any assignable cause.

TREATMENT. When hematuria is occasioned by some external injury, or when the patient is of full habit, it will be proper to give a cathartic every second or third day; and allow him to drink freely of an infusion of equal parts of Queen of the Meadow root and Peach leaves. In some cases it will become necessary to apply the Compound Tar plaster over the region of the kidneys, and keep up a discharge for some time. When it is caused by the use of Spirits of Turpentine or Cantharides, an infusion of Peach leaves and Marshmallow root should be drank freely, and a fomentation of Hops or Stramonium leaves be placed over the seat of the pain or distress. Hematuria from a stone in the kidney, or ureter, must be treated the same as

gravel. (See page 445.) When it is the result of some suppression, the original discharge must be restored by appropriate measures. When the bleeding is periodical, or connected with malarial influence, Sulphate of Quinia, Tincture of Muriate of Iron, with Nitric, Muriatic, or Sulphuric Acid, diluted with water, will be found useful in proper doses.

When the cause of the hemorrhage is not known, and it is profuse and continued, the bowels should be evacuated either by an internal purgative, or a cathartic injection, after which some diuretic may be given, as an infusion of Peach leaves and Queen of the Meadow root; or, the Compound Infusion of Trailing Arbutus may be advantageously administered. When there is a mucous deposit, an infusion of Uva Ursi will prove useful; if pus is present, an infusion of Peach leaves and Pareira Brava may be used freely. A strong decoction of Peach leaves, and Trailing Arbutus, equal parts, will be found a most excellent agent in this affection, from whatever cause.

If the patient is debilitated, as in typhus or scurvy, the mineral acids should be given, or Tincture of Muriate of Iron; and when the hemorrhage is passive, Oil of Turpentine in doses of ten or twenty drops every two hours, will be found of great efficacy. When the bladder becomes distended with blood, so that the urine cannot be discharged, a catheter should be introduced into the bladder, and an infusion of Golden Seal and Geranium, or of Alum Water, should be injected, that the clots may be broken down and removed.

In all cases the bowels should be kept regular, stimulants should be avoided, and when the hemorrhage is active, the patient should be kept as quiet as possible. Painful erections may be overcome by the constant application of cold water to the parts. The diet must be regulated according to the state of the system. Whortle berries, or a decoction of the leaves, have been used with success in this form of hemorrhage.

CONSTITUTIONAL DISEASES.

BY this classification is intended those diseases not heretofore named, which, although manifesting themselves at some particular part or organ of the body, owe their origin to a peculiar taint or predisposition of the system. It will be seen that among them are included some which are generally ranked among surgical affections.

CANCER, OR CARCINOMA.

CANCER is one of the most formidable and distressing diseases to which mankind is subject, one which has given rise to a great amount of quackery and imposition by ignorant pretenders, who, by their extravagant puffings and publications, together with their false statistics, have induced the credulous and miserable sufferer to apply for a cure, to be subjected to the painful action of caustics, wheedled out of large sums of money, and finally to meet with naught save bitter disappointment.

It is a disease occasionally met with in early life, but is more common to those advanced in years, especially females at the "turn of life," and attacks various organs, as the womb, testicle, penis, rectum, tongue, nose, lips, especially the lower one, and eye; it is more commonly, however, met with in the breast, and particularly among females.

SYMPTOMS. Cancer exists in two stages: one as a tumor or scirrhus, which may be considered the first stage—and the other in the form of an ulcer, being its second stage. In its first stage a small red or purplish spot, or several spots near each other, which eventually coalesce, will be observed, which may remain dormant for an indefinite time, but which, when aroused to activity, gradually spreads, forming a tumor of varied size, shape, and consistence. Frequently, the first symptom noticed is the tumor itself. The surface of the tumor is knotty and irregular, the skin being somewhat wrinkled, of natural color, sometimes of a leaden tint, and not unfrequently dark or livid; it generally spreads very slowly, and sometimes rapidly, depending probably on the condition of the system, forming adhesions to the surrounding parts as it progresses, and the glands of the arm-pit are usually enlarged in cancer of the breast, on the same side of the body, and those of the groin in cancer of the testicle. One symptom accompanying the tumor, and which has been considered characteristic of the disease is the peculiarity of the pains which recur more or less frequently, they being at first of a slight shooting nature, but eventually becoming sharp and lancinating, as if a knife, or sharp-pointed instrument was darting through the tumor. The veins in the neighborhood of the swelling frequently enlarge, and the parts feel uneasy and painful. After a longer or shorter time the tumor commences to soften, with increased redness, and finally ends in ulceration or the second stage of the disease. The ulcer is ragged, with inverted or everted edges, its surface dark colored, and the surrounding skin is hard, and puts on a livid aspect; as it progresses deep evacuations are formed, with sanious or ichorous discharges, having a peculiarly offensive odor, and very often blood is mixed with them; the matter discharged from a carcinomatous ulcer very rarely resembles pus in any of its characters, but is almost always thin and watery, frequently excoriating the parts with which it comes in contact. The pain in the ulcerative stage is more or less constant. Soon after ulceration the constitution becomes contaminated, the countenance is pale, sallow, and wan, with an appearance of sadness and anguish, the digestion becomes deranged, neuralgic pains in various parts of the system are frequent accompaniments, the system grows emaciated and feeble, and the patient is destroyed sooner or later.

Notwithstanding the above symptoms have heretofore been described as those constituting cancer, yet it is well known that they have sometimes been present in tumors of a non-malignant character, and which has led to considerable obscurity in the diagnosis of the disease. But fortunately by the aid of the microscope, cancer can now be detected and discriminated from other diseases, having an apparent resem-

Fig. 38½.



- a. Five free cancer nuclei. b. Small cancer cell.
- c. Large cancer cell. d. A cell with two nuclei.
- e.e.e. Compound or mother cancer cells, containing two, three, or more nuclei.
- f. A mother cell containing a simple nucleus, and a nucleated cell.
- g. Irregular and bifurcated cancer cells, the most usual forms.
- h. Cells containing double nuclei; cancer of the bladder invariably contains this variety.

blance to it, by the peculiarity of the cells entering into its formation, and which we will now describe. (See Fig. 38 $\frac{1}{2}$.)

The element of cancer consists of three parts, cell, nucleus, and nucleolus, all of which are peculiar to it, and should be studied under a microscope of at least 500 diameters, and giving a clear definition. A drop of the matter of cancer may be placed on a glass slide and covered with a thin glass, or, the cut surface of the tumor may be scraped with a scalpel, and a little water added to it, and then placed on the slide as above, and then examined.

"In all the varieties of cancerous tissue, nuclei are to be found, either enveloped by a cell, or floating free, generally more or less of both; in some specimens there exists a large number of free nuclei with only an occasional cell. The form and appearance of these nuclei is the most constant and unvarying of all cancer elements. They are ovoid, (See Fig. 38, *a*,) or more or less round; the latter are found more particularly when the eye or the lymphatic glands are the organs diseased. * * They have, ordinarily, in width, a diameter of from 1.100th of a millimetre, (a millimetre being equal to .039th of an inch,) or of .0039th of an inch, to 1.66th of a millimetre,—in one instance we met with one as wide as 1.38th of a millimetre; in length they measure from 1.133d to 1.100th of a millimetre. Their contour is dark and well-defined, with the interior containing very minute dark granulations; indeed, when the specimen is perfectly fresh, they have a homogeneous aspect, the granulations being so small as to give the appearance of a mere shading; if the specimen is kept a day or two, we find the interior filling up with larger granulations. Within these nuclei, when they have not been obscured by granular or fatty degeneration, there is found habitually a small body, or *nucleolus*, averaging in diameter about 1.500th of a millimetre. These nucleoli have somewhat of a yellowish tinge, with a brilliant centre and dark borders, refracting light like the fat vesicles. We would call attention, particularly, to the peculiar brilliancy of the centres of these nucleoli, which, we think, is characteristic."—*Donaldson*, in *American Journal of Medical Sciences*, No. LXIX., new series, Jan. 1853, page 59. Paul Broca of Paris, in a publication on Cancerous Tumors, translated by Geo. W. Otis, M. D., of Springfield, Mass., says:—"The fundamental and characteristic element is the *cancer nucleus*. The nucleus is sometimes free, sometimes included in a cell wall. Free nuclei are never absent. They occasionally exist alone, constituting *nuclear cancer*. The free nuclei (*a* Fig. 38,) are exactly similar to those contained in cells. They are remarkable for their large size, their uniformity, and the dimensions of their nucleoli. There are commonly only one or two nucleoli in each nucleus but there may be three. The diversity of the cells is in striking contrast with the uniformity of the nucleus. Some, (*b*,) are small and regular; sometimes they preserve their regularity as they increase, (*c*,) but in other cases (*d*, *g*,) they assume the oddest and most irregular forms. Most of the cells contain only a single nucleus; but not unfrequently two or more nuclei are found in the same cell (*d*,). Lastly, it is not rare to find cells that contain one or more nucleated cells (*e*,); these are called *mother cells*. This extreme variety in the form of cancer cells has been thought to prove that there was nothing specific in these elements. This is perfectly true. The nucleus alone is specific; but the capricious variations in the cells, far from embarrassing the diagnosis, is one of the best characteristics of cancerous tumors. No other accidental product exhibits such changing forms; besides, the nucleus is always present, to establish the identity of these varied cells. Apart from these nucleocellular elements, cancerous tumors contain accessory elements, to which the diversities in their aspect and consistency are due. The most important of

these is fibrous tissue. If this is abundant, the tumor is hard, and takes the name of scirrhus; if it is sparingly developed, the tumor is soft, and is termed encephaloid, &c."

CAUSES. Of the causes of cancer but little is known; though, in some instances, the predisposition to it appears to be common to certain families, being, as it were, transmitted from one generation to another; and among whom the disease is excited into action by local injuries. Blows, long-continued pressure, ligatures, an unhealthy state of the fluids of the system, &c., may cause an enfeebled vitality in the parts exposed, or an obstruction, which may result in a gradual decomposition of the matter of such parts. Decomposition of organic substances is always followed by inferior organic formations, owing their peculiar form and existence, to the rapidity of the decomposition, the character of the tissues acted upon, as well as of the fluids with which such tissues are supplied; and there is no doubt in my mind, that the local existence of cancer, and the several forms under which it appears, are owing to one, or a combination of all the above circumstances, producing and attending a decomposition of the tissues affected.

TREATMENT. That cancer has been occasionally cured, heretofore, by the employment of local and constitutional measures, I have no doubt; but the great misfortune has been that many non-malignant diseases have been mistaken for cancer, for it is only within a short time that any positive method of determining true cancer has been discovered, and on this account there is great uncertainty connected with the remedies which have from time to time been lauded for their efficacy. So that even at the present day there is no curative treatment for the disease upon which any great reliance can be placed. At one time I was greatly in hopes that a noted advertising Cancer Doctor of this city possessed a treatment which was effectual and permanent, but from what I have witnessed among his cancer patients for several years past,—in some a return of the disease, in others a total failure, and in several a rapid fatality,—I find that his treatment is attended with no greater success than that of physicians generally; indeed, his course in fungus hematodes, cancer of the breast, eye, and some other parts, is that which has been pursued by surgeons for years past, viz: extirpation by the knife—so that he does not seem to place much confidence in any local application or specific remedy with which he is acquainted. Although I regret that such is the case, more especially on account of suffering humanity, yet truth and science demand this statement.

I would remark here that patients afflicted with tumors or ulcers supposed to be cancers, should be extremely cautious in relation to the character and standing of the medical man into whose hands they submit their cases, for I have known an abscess of the breast to be mistaken for cancer, and the breast consequently removed by the knife,—also a bubo to be extirpated, having been diagnosed a cancer, &c. A medical writer makes the following judicious remarks:—"Finally and especially, let the unhappy patients and their friends be on their guard against the false pretences of interested quacks, who, without the slightest portion of medical skill, promise a safe and speedy cure of cancer: who, though scarcely able to read or write, boast of having succeeded where learning, extensive experience, and skill have failed; and who, pretending to be in possession of a secret by which the acutest sufferings of humanity can be alleviated, mysteriously conceal their nostrums from the candid practitioner, and deal only with hopeless misery, credulity, and ignorance."

It may be proper, however, to refer to the means which may be tried in cancer, with the hope that success may follow; and I would observe, that

cases of cancer, at least so called by various physicians from the peculiar malignity and other symptoms present, have been effectually cured by some of the subsequent modes.

Whether the cancer be in a state of tumor or ulcer, the only internal means upon which I would rely, with any degree of confidence, is the following:—Take of Arrow wood bark, (*Viburnum Dentatum*) Button grass root, White Pond Lily root, Yellow Dock root, each, equal parts; mix, and make a decoction or syrup, of which the patient may take a wineglassful three or four times a day. In addition to this, a three or four grain pill may be given every four or five hours, according to the symptoms produced, composed of the Inspissated Juice of Conium Maculatum into which as much Red Oxide of Iron, or Peroxide of Iron, has been worked, as will not interfere with its pilular consistence. The Button grass above-named grows plentifully in Virginia and North Carolina, and is probably an *Eryngium*,—I am not acquainted with its true botanical character, although I have frequently used the root. The bowels, of course, must be kept regular by appropriate means.

As a local application to the tumor several means have been recommended, as, a poultice of Arrow wood bark, White Pond Lily root, and Poke root, equal parts of each. Or, should there be much pain in the tumor, a preparation may be applied composed of equal parts of Extract of Hound's Tongue and strong Tobacco. These applications should be changed two or three times a day. In cutaneous cancer, I have found much benefit from the application of a saturated solution of Oxalic Acid to the affected part, several times a day. Constant compression of the tumor, and the application of ice to destroy it, have their advocates, and have occasionally been found successful.

But, although the above measures have removed tumors supposed to be cancers, we have no positive evidence that they were such, and must not be disappointed, therefore, in meeting with cases in which the disease steadily progresses to a state of ulceration. Many remedies have been used for the cure of open or ulcerated cancer, and with variable success,—and we cannot regard any of them with reliance, until the character of the disease has been fully determined by the microscope. The agents generally employed have been those of a caustic nature, and in relation to all of which I will make a few remarks:—If the ulcer be large, the caustic should be applied to only a portion of it at a time, and any great degree of pain occasioned by it must be kept down by anodynes internally, and the application of Stramonium, or Cicuta, or Tobacco leaves, over the part. When the pain has diminished, apply an Elm, or a Bread and Milk poultice, changing it two or three times a day, and continuing it until the eschar is loosened sufficiently to be removed with the forceps. When the surface of the ulcer is again exposed, it must be carefully examined, firstly observing whether there are any reddish lines or fibers to be seen in any part of it, sometimes called the “roots” of the cancer; if any are found, more of the caustic must be applied to such spots; secondly, the whole surface of the ulcer must be carefully explored by pressure, taking the blunt point of a knife, or probe, and making slight pressure on every part of the surface, and wherever this causes pain or tenderness, the caustic must be reapplied; thirdly, the discharge from the ulcer, or a portion of surface carefully scraped off, should always be examined from time to time, under the microscope, and as long as the characteristic cancer cells are present, the disease is not cured, and the treatment must be continued. After the malignant condition of the ulcer is removed, it may then be treated as a simple ulcer.

I have in my possession nearly fifty formulæ for agents said to have cured cancer, many of which have been obtained from celebrated "cancer doctors,"—some of them are composed of active substances so united as to make inert mixtures, others of them contain agents I would not use, as Arsenic, Corrosive Sublimate, Red Precipitate, &c., and others again appear to be founded upon a belief in dreams, astrology, witchcraft, and credulity. Among the agents, however, which may be tried, I will name the following:—

1. Vegetable Caustic, applied as above.
2. Sulphate of Zinc applied as above; this was the before-mentioned Cancer Doctor's celebrated remedy for cancer, but by itself is inefficacious.
3. Take of Sulphate of Zinc, Sulphate of Copper, each, one ounce, Sulphate of Morphia one drachm; mix. This has cured a very formidable malignant disease of the face and jaw.
4. Take of Lard three pounds, Verdigris two ounces, Beeswax two ounces, Scotch Snuff one pound; melt the Lard and Beeswax, and then stir in the other articles. This I know to have cured several so-called cases of cancer in the face.
5. Chromic Acid applied to the ulcer.
6. Oxalate of Copper, or Oxalate of Tin, dissolved in a weak solution of Oxalic Acid.
7. Take of Sulphate of Zinc one drachm, Sanguinarin two drachms, Extract of Red Clover, (*Trifolium Pratense*,) a sufficient quantity to form a plaster.
8. Take of Chloride of Bromine three parts, Chloride of Zinc two parts, Chloride of Antimony, Chloride of Gold, each, one part. To be mixed in the air, on account of the fumes disengaged.—*Landolfi*.

The surface of a cancerous ulcer when not treated by caustic should be kept perfectly clean, and the best agent with which I am acquainted for this purpose, is the Tincture of Muriate of Iron, which may be applied three or four times a day. Or, one of the following may be used as often as required:—1. Take of Creosote twenty drops, Laudanum twenty-five drops, Castile Soapsuds one fluidounce; mix. 2. Take of Vinegar half a pint, Bloodroot one ounce, Acetate of Iron half an ounce, Creosote twenty drops; mix.

The diet of the patient should be very light and meagre; and attention should be bestowed upon the skin as well as the kidneys. I have known some apparently cancerous diseases to be cured by the internal use of a solution of Peroxide of Iron, with vegetable alteratives, at the same time keeping the ulcer constantly moistened with the Iron in solution.

Dr. Gilbert, who has acquired considerable celebrity in the cure of malignant diseases, makes use of the following agents:—Take of strong Apple Vinegar one gallon, Verdigris one pound, Honey one quart. Place these in a copper kettle with eight or ten bars of Pewter Solder. Boil very slowly, or rather simmer by means of a moderate fire, until reduced to one-half the original quantity. Keep in a well-closed glass vessel, as exposure to the air decomposes it. To use it, first wash the ulcer with Castile Soapsuds, and if any fungous flesh or unhealthy granulation exists, apply Vegetable Caustic, or other caustic best suited to the case, then moisten lint with the above, and fill the ulcer with it; over this place a piece of folded muslin large enough to cover all the inflamed parts, and bandage. Keep the whole constantly moistened with the preparation, not allowing it to become dry. The ulcer may be dressed as required from one to three times a day.

His *Vegetable Caustic* is composed of the powdered, dried, inner bark of Chestnut Oak, and burnt Alum, each, equal parts. If it is too painful, warm water poured on, will relieve it.

SCROFULA, OR KING'S EVIL.

SCROFULA, or King's Evil, is a very common affection, manifesting itself under many forms, as consumption, hip disease, white swelling, rickets, dow worm, bronchocele, &c. As ordinarily understood, it consists of an enlargement of glandular parts, inflaming and suppurating, forming ulcers which discharge a white curdy matter, and which are often very troublesome to heal.

SYMPTOMS. The first, most common, and distinctive symptom of scrofula, is, enlargement of the lymphatic glands, especially those about the neck. These enlargements or tumors may remain in an indolent condition for a long time, neither increasing nor diminishing in size, and causing no pain or other disagreeable symptoms. Occasionally they may disappear, being removed by the powers of the system, but more generally, they gradually advance, become inflamed and painful, soften, and eventually discharge matter of a thin, ichorous nature, mixed with curdy or cheese-like flakes. At first this matter is discharged from several small sinuses or openings; but eventually these combine, forming ulcers with jagged and uneven edges, which are very indolent, healing slowly, and leaving unsightly scars when they do heal. They are apt to be succeeded by other tumors, which run a similar course, and the disease may continue in this manner for a number of years until it is cured, or the system is destroyed by it.

Hufeland observes that at first the swellings are "small, movable under the finger, elastic, not painful, and without any change of color in the skin. Those on the sides and back part of the neck are commonly the first to feel the influence of the scrofulous taint; the examination of these parts is, therefore of the utmost importance in establishing the diagnosis. After these, and even sometimes before, the glands of the arm-pits begin to swell in their turn, then come those of the groin, and in some instances those of the whole body. Their size and consistence gradually augment, engorgement of the surrounding parts take place, and thus they lose their mobility. It is uncommon for a single gland to be affected; the contagion ordinarily extends to several; indeed they are often confounded together, and form an enormous tumor, or become united without being confounded, so as to resemble a sort of chain. At length, when the disease has reached a certain height, the lymphatic vessels themselves are engorged, and feel like catgut. * * These tumors may remain in the same state during several years; but at the commencement they are variable, appearing and disappearing alternately. In proportion as the scrofulous taint increases, the glandular tumors become harder and less movable. In some cases they remain cold and indolent; in others, the skin above them reddens, pain is felt in the center of the gland, inflammation slowly takes place, and suppuration follows; but the pus is always of a bad quality."

CAUSES. The predisposition to scrofula may be transmitted from generation to generation, not manifesting itself in one generation, while severely afflicting another; yet it is not invariably the case, that children born of scrofulous parents should be affected with scrofulous diseases; for often but one child is affected, while the rest of the children, to all appearance, present no symptoms of it whatever. One of the most important

points in the selection of a husband or wife, should be, that he or she shall be free from the scrofulous taint, and thus secure one great means of not generating scrofulous children. Again, the disease is often present among persons whose ancestors, as far as can be ascertained, have never had a symptom of it; this fate is especially reserved for the children of those who marry after having abused their youthful powers, or exhausted their nervous energies by indulging too freely in venereal pleasures; it also arises among the offspring of those who have debilitated the organs of reproduction by masturbation; frequent copulation during pregnancy, will effect a disposition to scrofula in the child. Intermarrying among blood relations, as among cousins, &c., is a great source not only of scrofula, but of idiocy, insanity, and a host of terrible afflictions. Children of a mother, and particularly of a father far advanced in years, often bring into the world a disposition to scrofula, which will be developed at an early period. Scrofula is often a consequence of syphilitic disease of the parent, in which case it partakes in part of the character of each disease.

The scrofulous diathesis may also be produced in children, not otherwise disposed to it, by improper food; artificial suckling; the use of farinaceous preparations that have not been fermented or well cooked; food that is too watery; impure atmosphere; excessive use of pork or fat meats; acidity; use of opium, mercury, bleeding, &c.; want of exercise; want of cleanliness; too great a degree of heat; too early mental application; and the too early exercise of the sexual organs. It is frequently excited into action among those predisposed to it, by measles, small-pox, scarlet fever, vaccination, &c., following as a sequel to these diseases. Children having a soft fine skin, fair hair, rosy cheeks, and delicate complexion, are more commonly attacked with scrofula, though those of a dark complexion and of stronger constitutions, are not entirely exempt from it. They are often born with the disease fully formed; some being affected soon after birth with ophthalmia; others present eruptions of the skin, ulcerations, or discharges of matter; while others have glandular engorgements, or spina bifida. Children who have a large belly, whose joints are large, with blue eyes, smooth, fine skin, and large, prominent forehead, are generally of a scrofulous diathesis. The attacks of scrofula are much influenced by the climate, and the seasons of the year; prevailing more extensively in temperate latitudes, where the climate is variable, or cool and moist, commencing generally in the winter or spring, and disappearing, or considerably amending in Summer or Autumn. In itself, scrofula is not a mortal affection, but may, and too commonly does become so, either by attacking organs that are essential to life, or in effecting extensive disorganizations.

TREATMENT. The treatment of scrofula may be divided into constitutional and local. The constitutional consists in the administration of agents internally, of an alterative character, and which possess the power of gradually removing that condition of the system upon which the disease depends. The principal agents for this purpose, are the Compound Syrup of Stillingia, and the Compound Syrup of Yellow Dock; these may be used either with, or without the addition of Iodide of Potassium, and it will be found very advantageous, to use first one Syrup for a few weeks, and then the other, and so on alternately until the cure is effected. Sometimes, in conjunction with these preparations, I administer a pill composed of Iodine half a grain, Sulphate of Morphia, one-eighth of a grain, Burnt Sponge one grain, Extract of Liquorice a sufficient quantity to form a pill; one of these may be given every morning, about an hour after breakfast, and one at bedtime. It will be found that in all cases of scrofula, those

alteratives which exert an influence on the kidneys, increasing the quantity of urine and improving its character, will prove the most efficacious. The above constitutional treatment must be pursued in every stage of scrofula.

In addition to these means, the bowels must be kept regular by a use of the Powder of Rhubarb and Bicarbonate of Potassa, named under Dyspepsia, page 399. And if there is no necessity for this, the bowels being regular, acidity of the stomach must be carefully guarded against, and removed when present by the use of some alkaline solution, or charcoal, lime-water, &c.

The local treatment will vary according to the condition of the affected parts; thus, if the tumor be free from any great soreness, and from inflammation, it may be dispersed by one of the following preparations:—

1. Take of Muriate of Ammonia two drachms, Distilled water one fluid-ounce; dissolve the Ammonia in the water, and add Tincture of Conium Maculatum one fluidounce. A piece of lint, cotton, or a compress, must be kept over the tumor, constantly moistened with this lotion.

2. Boil Gum Ammoniac in Vinegar of Squills to the consistency of a plaster, to every pound of which add of very finely powdered Muriate of Ammonia two ounces. Spread some of this on leather and place over the tumor, allowing it to remain as long as it will adhere, before renewing it.

3. Use the Compound Plaster of Belladonna.

I name these several applications because it will frequently be found that while one of them may exert but little or no influence in dispersing the tumor, the other will act with power and efficacy.

If the tumor is in a state of inflammation, it will be necessary to subdue this by the application of poultices; these may consist of Elm bark and Cicuta leaves, equal parts; Elm bark and powdered Bayberry bark; powdered root of Indian Turnip mixed with warm water; or, Elm bark, powdered Poke root, and powdered Blue Flag, equal parts. Whichever poultice is employed, it should be changed three times a day. In some cases a poultice of roasted Poke root will be found very beneficial; and frequently the lotion above named of Muriate of Ammonia and Tincture of Conium, will be all-sufficient, whether inflammation be present or not. When suppuration has occurred, the earlier the matter is discharged, the better; therefore, as soon as the suppuration has become sufficiently matured, the abscess should be opened, not with a lancet, but by the application of Caustic Potash, which should be passed into the cavity of the suppurated tumor.

The local treatment for a scrofulous ulcer or abscess, will vary considerably from the preceding; the ulcer must be washed or syringed daily, with a mixture of Castile Soap suds, water and Spirits, followed by a solution of Vegetable Caustic; or this last may be introduced in powder on tents, into the sinuses or openings; after which apply to the ulcer, the Ointment of Bayberry, or the Red Oxide of Lead Plaster, spread on some lint. At night, a poultice of equal parts of Elm bark and Bayberry bark, may be applied, especially if some degree of inflammation be present. A very excellent poultice for a scrofulous ulcer is made of equal parts of Frost-weed, Figwort, and Wild Indigo leaves. Whatever may be the dressings employed, they should be changed two or three times every day. The matter from scrofulous ulcers cannot produce scrofula, even by inoculation.

An attention to hygienic measures is as important in this affection, as to the medicinal. The patient should eat as much nutritious food as he can, avoiding, however, acids, indigestible, and fat or greasy articles, taking

care, in all instances, not to overload the stomach. Salt is very useful in scrofula, and may be eaten freely by those attacked with it. Ale, porter, wine, and even brandy, are admissible and useful in scrofulous disease, when used in moderation. The patient should take regular and moderate exercise in the open air, every day, according to his strength, but never to create fatigue. The whole surface should be bathed daily with a mixture of rain-water, Vinegar, each, one pint, Whisky half a pint, Salt a table-spoonful; and friction with the flesh-brush, or flannel, to the body and limbs once or twice a day will be found of much service in effecting a healthy condition of the skin and capillary organs. Sometimes a Spirit vapor bath, every week or two, will aid very much in facilitating the cure. The clothing should be warm and comfortable, and the hours of sleep should be regulated according to the plan advised on page 119. When much debility is present, the patient may use a preparation of Port Wine one pint, Red Peruvian bark one ounce, in doses of a wineglassful three times a day; or, some preparation of Iron may be used, as Wine of Iron, Citrate of Quinia and Iron, Tincture of Muriate of Iron, &c. Occasionally, cases of scrofula will be met with, which obstinately resist all treatment until the glandular system has been aroused to a state of susceptibility, and which may be effected by the administration of the following remedies, continued until they cause a salivation, which, however, need not be feared, as it will be entirely of a different character from mercurial salivation, producing no dangerous results whatever: 1. Take of Blue Flag, Mandrake, Prickly-Ash bark, each, in powder, one drachm; mix. The dose is five or ten grains every two or three hours, not to act upon the bowels, and continued until salivation is produced.—2. Take of Iridin, Podophyllin, and Xanthoxylin, equal parts; mix, and give as above, in doses of a grain.

Scrofulous Disease of the Eyelids, or SCROFULOUS OPHTHALMIA, will require the constitutional treatment just laid down, but the local means will vary. The Compound Ointment of the Oxide of Zinc may be applied to the lids, or the following:—Bore a hole lengthwise through a stout piece of a recent limb of Tag Alder, (*Alnus Rubra*,) fill the opening with finely powdered Salt, and close it at each end. Put this into hot ashes, and let it remain till the Tag Alder is almost all charred, (three or four days,) then split it open, take out the salt which will be in a roll like brimstone, powder, and keep it in a vial. To use it, blow some of the powder upon the eye through a quill. Or, the Compound Ointment of Bayberry may be used.*

* Mrs. C. Armington, aged 32, discovered scrofulous swellings in her throat and neck some twelve years previous to her calling on me, and, notwithstanding the treatment of several celebrated physicians, the disease slowly progressed until ulceration ensued, which would alternately heal over and again ulcerate, discharging large quantities of pus. After a few years a large tumor made its appearance in the axilla, which finally suppurated forming very painful ulcers, and discharging pus from several openings. Eventually tumors succeeded by ulcers, attacked the hips, knees, and hands; which in the first two resembled hip disease (*coxalgia*) and white swelling (*hydrarthrus*,) and from which enormous quantities of pus were thrown out—about this time also commenced a lateral curvature of the spine. Her appetite was very irregular, sometimes not being able to retain the least particle of food or drink upon the stomach, for two and three weeks at a time, and during which period she would discharge from the bladder from two to four gallons of water daily, and vomit fluid of a greenish cast once or twice a day, especially if she ate or drank anything; and during such times, her exhaustion became so great, that on several different occasions her friends had collected around her, expecting every minute would prove her last. She had been under the treatment of many physicians, had taken quantities of different mercurial preparations, iodine, panaceas, syrups, and the various nostrums of the day, but all to no purpose.

The above is the history which I received from the patient. On her application to me I found her in the following condition:—Several large ulcers in the throat, through some of which I could pass a probe from one side of the throat to the other. These ulcers were spread all around the

CONSUMPTION.

CONSUMPTION, OR PHTHISIS PULMONALIS.

CONSUMPTION is a distressing and fatal disease, characterized by cough, debility, emaciation, purulent expectoration, and hectic fever; it chiefly attacks the young, the fair, and the amiable, and is generally considered incurable. In certain northern latitudes, it prevails with the greatest violence, owing probably to the frequent atmospherical changes from heat to cold, dryness to dampness, &c.; it is also found to exist in some warm climates. Some persons consider it contagious; this, however, if true at all, must occur very rarely, and only among those who, having a predisposition to the disease, sleep with a patient in whom the disease exists in an ulcerated stage, and is attended with fetid expectoration, and cadaverous-smelling night-sweats.

throat, and on the left side extended to the axilla and left mamma, forming a large scrofulous ulcer of a most hideous appearance. Ulcers were also on the hands, hips, and knees, which discharged enormous quantities of a thin, yellowish-white matter; several pieces of bone had been thrown out, and the left hand and knee were useless, ankylosed. The spinal curvature was still present. I informed her friends that a cure was very doubtful, and that I would rather not undertake the case, as in all probability she could not live but a few months longer; however, having been acquainted with several cures which had taken place while under my treatment, they importuned and insisted very strongly, yet I should have positively declined had not the patient, with tears in her eyes, begged me at least to relieve her from some of her sufferings, even if she could not be cured.

To make an impression upon the glandular system, I administered five grains of the following powder, every two hours, until ptyalism was produced:—Take of Blue Flag, Mandrake, each, in powder, ten grains, powdered bark of Prickly Ash twenty grains; mix. When this effect was produced, the intervals between the doses were lengthened to three, four, or five hours, sufficient to maintain this influence for several days, without causing active catharsis. In this manner I salivated my patient every third week, for a period of some five or six months. In the mean time, the following preparation was administered every two hours, in doses of twenty drops, mixed with a gill of water:—Take of Saturated Tinctures of Yellow Dock, Black Cohosh, leaves of Bittersweet, each, two fluidounces, Tincture of Wild Indigo root one fluidounce; mix.

The use of this was always omitted during the week for salivation. A poultice of Elm bark, two parts, and the leaves of Wild Indigo, one part, was the only application to the ulcers, which was changed three times a day, washing the ulcers and injecting into the sinuses at each change of dressing, a mixture composed of equal parts of Castile Soapsuds and Tincture of Bayberry bark, (made of Jamaica spirits.) The whole body was bathed every night and morning with cool water, and occasionally the alkaline bath, and the only restrictions in diet were to use no acid or greasy food; tender lean meat, salt or salted food to be eaten whenever desired. The only article out of many used, which procured relief and lessened the copious discharges from the bladder during the attacks, above related, was, unadulterated Jamaica spirits, taken in doses of a wineglassful every hour; the third or fourth dose was followed by a cessation of the discharge, and she would rapidly regain her strength, and the intervals between these attacks gradually increased, until in about six months from the commencement of my treatment, they left her entirely. At this time I deemed it unnecessary for any further salivation, and continued the above course perseveringly with the addition of the internal administration of the Compound Tincture of Iodine, three times a day, commencing with five drops for a dose, and gradually increasing to twenty drops. As soon as her strength would permit, I placed her upon a system of calisthenic exercises, to be practised daily, and likewise the use of electro-magnetism to the muscles of the back, for the purpose of removing the spinal curvature.

While under this treatment it was a matter of astonishment to observe the gradual but positive improvement which followed, and it was this fact alone which determined me to make no alteration in the remedies, until they ceased to produce any benefit. In about thirteen months the ulcers had all healed, the curvature was removed, and she had gained considerable flesh, there remaining only the scars, a distortion of the left hand, and ankylosis of the left knee.

To many, especially those who have been accustomed to treat this class of diseases with large doses of medicine, it may appear strange that such simple treatment should effect a cure in what would at once be called a hopeless case;—but it is in accordance with, and corroborates the correctness of the views which I have maintained for the last twenty years, that in the treatment of any chronic diseases more positive and permanent benefit results from small doses of remedies, given sufficiently often to keep the patient constantly under their influence, without exerting any immediate powerful action, than is ever witnessed among patients submitted to direct, energetic, and heroic measures. As to the salivation produced by the powder described, it is altogether different from that caused by mercurial remedies, it renders the system more readily susceptible to the action of other agents, and is easily controlled, as, unlike that from mercury it gradually ceases when the remedy is omitted, effecting no unpleasant nor unhealthy changes in the condition of the patient.

SYMPTOMS. The general symptoms of this disease are, an habitual cough; morbid expectoration; pains in the breast; casual flush or feverish heat in the hands, feet, and cheeks; change of voice; thin fingers and nose; bent or crooked nails; falling of the hair, &c. The disease has been divided into three, four, and even five stages, by medical writers; but for practical purposes, three stages will be found best adapted to the course of the disease.

In the *first or incipient stage*, there will be found some difficulty in breathing, perhaps amounting to a shortness of breath, more especially on exercising; cough is a very early symptom; it may be slight and hacking at first, but gradually becomes more and more distressing and frequent; at first it is dry, but is soon attended with an expectoration of a thin or frothy character, or resembling mucus. Very frequently the expectoration will be streaked with blood, and sometimes the first observable symptom of consumption will be more or less profuse bleeding from the lungs. Slight, transient pains will be felt in various parts of the chest, and as the disease advances, the breathing will become more difficult, the cough more severe and distressing, the skin hot and dry, with a burning sensation in the palms of the hands and soles of the feet: the appetite is variable and capricious; the bowels irregular; the urine turbid; the pulse a little quicker than usual; the tongue clean, or furred white in the center, and red at the tip and edges; and often, night-sweats are met with even in this stage. The fever accompanying this disease is of the remittent kind, the remissions occurring toward evening; sometimes there will be two exacerbations daily, one about noon, and the other during the night or toward morning, which usually terminates in a profuse perspiration. These symptoms will be found to vary with different persons, according to the extent of the disease, and the several modifying circumstances to which they may be exposed.

It is very frequently the case that the first symptoms of consumption are observed only after an exposure to cold, an attack of pleurisy, or pneumonia, or some imprudence in diet; hence those predisposed to it cannot be too careful to avoid all these exciting causes. The white of the eye has a pearly white, or slightly bluish appearance.

In the *second stage*, the expectoration presents small, cheese-like particles, of a light-yellowish hue, owing to softening of the tubercles in the lungs; the cough increases in severity, and is more frequent; breathing becomes more hurried or difficult; chilly sensations which were slightly felt in the first stage, now amount to actual chills, which occur in the latter part of the day, and are followed by heat of skin and abundant morning perspiration. The face is flushed considerably toward evening; the pulse increases in frequency; emaciation takes place with debility; the appetite fails; the features assume a sharp appearance; there is a sense of constriction across the chest, and frequently a pain is experienced in one side, which is increased upon lying on that side, or the cough may be augmented by lying on the affected side, and perhaps the difficulty of breathing may be also exasperated. Very often a deep inhalation, or even a fit of coughing, will give rise to more or less pain in some portion of the chest. Bleeding from the lungs, is common in this stage, owing to erosion of small blood-vessels by ulceration. It must be remembered, however, that bleeding of the lungs is not a certain sign of consumption, it being frequently met with as an independent affection. Sometimes an obstinate and debilitating diarrhea occurs, which assists still further to weaken the patient. In this stage, pains in the bowels, irregular chills, hectic fever, thirst, and night-

sweats, are very common ; but, as in the first stage, all these symptoms will vary in different individuals.

In the *third stage* all the preceding symptoms are aggravated ; the breathing is short and hurried ; the cough almost constant, and very distressing ; the voice weak and hoarse ; the expectoration is purulent, and contains the cheesy particles referred to in the second stage. The emaciation and debility are very much increased, the features become sharp, the eyes hollow and languid, the hair falls off, the nails curve inward, and are more or less livid in color, the feet and ankles swell ; diarrhea continues obstinate and unyielding ; a few weeks previous to dissolution, the mouth becomes attacked with aphthous ulcerations, and occasionally the patient becomes delirious. More generally, however, the senses remain to the end not much impaired, and a peculiar symptom attendant on this disease is, that those who labor under it, are seldom apprehensive of danger, but flatter themselves with a speedy recovery, the mind being confident and full of hope. In this last stage, the embarrassment in breathing is often excessive, and most generally, bed-sores are produced, which add much to the sufferings of the patient. Death may occur in several ways ; from debility ; from peritonitis, brought on by ulceration of the bowels ; from sudden congestion of the lungs ; from pulmonary hemorrhage ; or, from an accumulation of air in the pleural cavity.

No thorough-bred physician of the present day, will attempt to form a diagnosis in pulmonary diseases, without calling the stethoscope to his aid ; though it may be proper to remark that considerable experience and much practice is required to enable any one to form an accurate judgment from auscultation and percussion. Hence, in a work intended for the public, who cannot be expected to cultivate a stethoscopic ear, it would be useless to occupy a portion of its pages in discussing this method of examination.

CAUSES. Phthisis Pulmonalis is owing to a tuberculous condition of the lungs, which more or less rapidly undergoes a process of softening and ulceration, giving rise to the various symptoms just named, as it progresses. These tubercles may, however, exist for many years, even to old age, without any disagreeable symptoms, unless aroused into action by some of the exciting causes. The predisposition to the disease appears to be transmitted from parent to child ; and those who are most liable, are generally of slender make, with long necks, prominent shoulders, narrow chests, fine, clear skin, fair hair, and delicate, rosy complexions. Sometimes there will be a disproportionate thickness of the upper lip, a weak voice, perhaps large veins, and great sensitiveness. Of 80 cases described by Dr. Glover, 42 furnished clear evidence of transmission of the predisposition from progenitors. Among 1010 consumptive patients admitted into the Brompton Hospital, nearly one in every four was born of a phthisical parent. Other causes which may produce the disease or excite it into activity when existing in a latent condition, are colds ; unwholesome and inefficient food ; sedentary habits, and want of exercise ; too early study and application ; thin clothing ; excessive cares, grief, or other depressing influences of the mind ; masturbation ; indulgence of the passions ; premature or unsound marriages ; late watching ; frequent and excessive debaucheries ; continuing to suckle too long, under a state of debility ; frequent exposure to dust, as among millers, bakers, stone-cutters, &c. ; bad treatment of certain diseases, as measles, small pox, syphilis, &c. ; dwelling in damp and confined places ; tight lacing ; inhalation of deleterious gases ; use of improper medicines ; suppression of accustomed evacuations, as of fever sores, menstruation, fistula in ano, &c. Most people date the beginning of the disease from

wetting their feet, lying in damp beds, wearing wet clothes, being exposed to the night air, suddenly passing in a state of perspiration from a heated room to cold air, as from a ball room or other crowded place, and to other circumstances of a similar character. Females appear to be particularly liable to the disease, owing to their sedentary habits, tight lacing, thin or imperfect mode of dressing, excessive lactation, menstrual derangements, &c.; and the ages at which the disease is most common, are from twenty to thirty, or in the old from fifty to eighty.

PROGNOSIS. That consumption is a curable disease, does not admit of doubt—but its curability depends much upon the strength of the predisposition, the condition of the constitution, the extent of the tuberculous formations, and the stage in which the treatment is commenced. Of course, no sensible mind would anticipate such favorable results from medicinal treatment in the latter stages as in the early; and, indeed, the sooner treatment is adopted the greater will be the chances for the patient. After softening or ulceration of the tubercles the prognosis is always unfavorable, but even then, the patient may be saved if the tuberculous diathesis exists in a minor degree, and the tubercles formed occupy but a limited portion of the lung. The greater the tuberculous disposition, and the more extensive the ulceration, the more unfavorable will be the prognosis. It will sometimes be the case that severe cough, profuse expectoration, quick pulse, hectic fever and night-sweats will be present, without any tuberculous difficulty of the lungs, these symptoms originating from other causes, and yielding to appropriate treatment.

TREATMENT. The treatment for consumption may be divided into the hygienical and the therapeutical, each of which are of great importance, and should on no account be omitted. Indeed, the adoption of only one of these, dispensing with the other is seldom attended with benefit; though, if preference has to be given to either, it should be to the *hygienical* measures.

Among these an attention to diet deserves the first consideration. The plan of attempting to cure consumption by means of a low diet, which was the general course a few years since, has been productive of a vast deal of harm, because the excessive debility or premature state of emaciation effected thereby, is as destructive to vital action as the disease itself. In this disease, especially, it is required to sustain and nourish the body, by proper and nutritious diet, so that the blood may be thereby enriched, as well as deprived of those elements which favor tuberculous deposits. The food must not only be nutritious, but easy of digestion, and not disposed to cause flatulence or acidity of stomach. Among meats, beef is preferable to any other; an “underdone,” or “rare,” tender steak, or roast piece, is a very desirable article of diet for consumptives. Mutton, not too old, young fowls, tender game, moist and well-cured hams, rare-boiled eggs, oysters, &c., may likewise be advantageously used. Among vegetables may be named baked potatoes, wheat bread, boiled rice, rice pudding, ripe fruits, lettuce, &c., avoiding all pastries, warm cakes and bread, and an excess of the fat of meats. Full meals, and especially when repeated several times a day, are injurious; light meals are always preferable, and they may be repeated three or four times a day without overloading or debilitating the digestive organs. Salt is of essential service in all tuberculous affections, and may be used freely. As a drink, water, milk, milk and water, and in cases of acid stomach milk two parts, lime-water one part; tea or cocoa may be used as best suits the patient's taste. The milk used should be fresh, and taken from a healthy and well-fed cow. Stimulants will also be advantageous, if used in moderation, not sufficient to excite the brain, as ale, porter, wines, and in many cases even good French brandy.

Exercise in the open air is the next important hygienic measure, and this should be taken regularly and daily, and made as much as possible a matter of amusement, instead of a task for the preservation of life. Agreeable company should always be in attendance, if possible. The patient should, when standing, sitting, or walking, always assume a perfectly straight condition of the body, with the shoulders thrown back, the small of the back curved inward, and the head erect; this position must also be attended to in reading, writing, sewing, &c., avoiding any pressure of the chest or stomach against a desk or counter, or sitting with the body doubled forward. By not attending to this erect posture, the stomach is pressed against the diaphragm, the capacity of the chest is consequently contracted, and various unpleasant symptoms are occasioned thereby. One of the objects in exercising is to expand the chest, and give greater capacity for the action of the lungs; and this should never be lost sight of. The sleep must be regular, and any propensity to indolence, oversleeping, or sleeplessness, must be overcome. Passions, cares, and meditations, must by all means be avoided; moderation in all things, even in conversation, is needful—excesses are injurious. Moderate labor, cheerful company, healthy diversions, indulgence of hopes, and a cheerful temper, are all conducive to a proper state of body and mind, which tends to facilitate the cure.

Bathing every day, with brisk friction when drying, using a coarse towel, will be found of great advantage, not only removing effete matters from the skin, but likewise exciting a salutary influence upon the capillary system, and thereby upon the whole body. An attention to the rules laid down in the introductory part of this work, under hygiene, especially relative to food, exercise, diet, clothing, bathing, &c., will prove highly beneficial in all cases.

Cold air, or rather sudden changes from heat to cold, or cold to heat, must be avoided. Cotton, wool, or fur, may be worn, (on the breast chiefly,) to prevent the bad effects of these changes, if unavoidable, or to keep the breast at an even temperature, if not the whole body. Changes of air, or occupations, are to be resorted to when we can find better; but we must avoid changing for the worse. Cities are to be preferred to the country, because the air is less bleak and sharp; better attendance and remedies can also be procured. Sea voyages are to be avoided, as the sea air is too keen, lacking good diet, attendance, &c. In cases of confirmed consumption, in which the lungs are extensively diseased, when hectic fever, emaciation, and other symptoms which characterize its advanced stages are present, change of climate can be of no service, and may even accelerate the progress of the disease. In the incipient stages a change will hardly prove beneficial, unless the patient can reside for a number of years in some suitable climate; to visit some distant place for a few months, or even a year, and then to return uncured, is not only prejudicial to life but is a waste of time and money. The climate which I consider the best for a consumptive is among the temperate latitudes of the Southern hemisphere, as, for instance, in Buenos Ayres—and I believe a hotel and gymnasium for consumptives in that or some neighboring place, would prove of immense advantage to consumptive patients, especially those in the commencing stages. In advanced consumption, artificially heated rooms are beneficial, and often tend to prolong life; but in the incipient stages they are injurious.

The therapeutic means will consist of alteratives to remove the tuberculous disposition of the system, and tonics to impart strength and vigor. The Compound Syrup of Yellow Dock, with the addition of Iodide of Potassium, possesses both tonic and alterative properties, and will be found highly

useful in the treatment of consumption. Or, as an alterative only, the Iodine Pills may be used. As the blood is deficient in red globules in this disease, preparations of Iron will prove highly useful; among these may be named a solution of Iodide of Iron in doses of from twenty to forty drops, well diluted with sweetened water, and repeated three or four times a day; the Tincture of Muriate of Iron in doses of five drops in a wineglassful of water, and repeated every two or three hours; or the Citrate of Iron in doses of five grains, repeated four or five times a day, &c. A very useful alterative is composed of Tincture of Bloodroot one fluidrachm, Fluid Extract of Wild Cherry three fluidrachms, infusion of Liquorice half a pint, Muriate of Ammonia one drachm; mix. The dose is a table-spoonful every two hours. In addition to these internal remedies, an alterative influence will frequently be obtained by means of inhalations, and these will vary with different individual cases, according to the effects they produce. Among the agents which have been found the most useful in inhalation, and which have been used with success in the Brompton Hospital, are Chlorine, Creosote, Conium, Benzoic Acid, Hydrocyanic Acid diluted, pure Deodorized Alcohol, Oil of Bitter Almonds, Nitric, Benzoic, Acetic, and Tannic Acids, Camphor, Balsam of Tolu, and Bloodroot, Canada Balsam, Aqua Ammonia, Iodine, &c. These require to be used in various combinations; thus, the following will frequently be of marked benefit:—Take of Nitric Acid twenty-five drops, Camphor four drachms, Tannic Acid four drachms, pure Deodorized Alcohol six fluidounces; mix. Or, take of Acetic Acid, Benzoic Acid, Tincture of Conium, each, four drachms, pure Deodorized Alcohol four fluidounces; mix. Or, take of Iodine, Iodide of Potassium, each, six grains, Tincture of Conium two fluidounces, pure Deodorized Alcohol two fluidounces; mix. A piece of sponge may be moistened with a teaspoonful or two of one of these mixtures, and then placed in a tumbler, which, being held to the mouth and nostrils, the patient may inhale the vapor for ten or fifteen minutes at a time, repeating the inhalation several times a day. Another very useful preparation for inhalation is composed of Nitre twenty grains, common salt one drachm, Muriate of Ammonia one drachm, water one pint; mix. Heat this solution, and inhale the warm vapor which emanates. A table-spoonful of Tar Water, to which twenty drops of Tincture of Iodine have been added, may be heated, and the vapor inhaled with much advantage in some cases. These inhalations not only bring the remedies in immediate contact with the diseased parts, but habituate the patient to full inspiration and expansion of the chest.

One of the most troublesome and tormenting symptoms attending consumption is cough, and which will frequently resist every measure to relieve it. I have met with much advantage from the following mixture:—Take Fluid Extract of Black Cohosh, Fluid Extract of Wild Cherry, Tincture of Bloodroot, each, one fluidounce, Tincture of Sulphate of Morphia, (60 grains to Alcohol 1 pint,) two fluidrachms; mix. The dose is a teaspoonful three or four times a day, or whenever the cough is severe. Other preparations will frequently be found advantageous in relieving cough, as a pill composed of half a grain each of Opium and Camphor, and one grain of White Soap; or a pill composed of Extract of Hyoscyamus, Balsam of Canada, Ipecacuanha, Alcoholic Extract of Black Cohosh, each, equal parts; mix, and divide into three or four grain pills, one of which may be given several times a day. Another very excellent cough mixture is prepared thus:—Take of Fluid Extract of Wild Cherry, Syrup of Ipecacuanha, Syrup of Balsam Tolu, Tincture of Hyoscyamus, each, one fluidounce; mix. The dose is a teaspoonful whenever the cough is severe. In some cases, a pill composed of equal parts

of Lactucarium, Extract of Hyoscyamus, and Extract of Cypripedium, will be of efficacy. In very severe cough I have found more benefit from the moderate inhalation of Chloroform than from the use of any other remedy; perhaps Ether might answer a similar purpose. Professor Tully says, "In all cases allay the cough by some preparation of Opium in uniform doses, at short and regular intervals, and used continually. The greater the quantity of Opium required in the twenty-four hours, the greater the number of doses to be made, and the shorter the intervals between them. Where much is required, repeat the doses as often as every three hours; where only a moderate quantity is required, repeat the dose about every six hours—never have the interval longer than this. Always give sufficient to restrain the cough as much as possible. If the cough be difficult of restraint, the Opium may be conjoined with some other narcotics, particularly those which act more especially upon the nerves of respiratory motion, as Conium, Cyanogen, Hydroguret of Benzyle, Nicotiana, Aconite, &c."

Profuse night sweats are another source of much discomfort to the patient; these may sometimes be relieved by ten or twelve drops of Elixir Vitriol, taken at bedtime, in a wineglass half full of water. They may frequently be checked by the free use of an infusion of Sage and Whiteweed; or, by a pill composed of Tannic Acid, Lupulin, and Extract of Hyoscyamus, one grain of each, to be taken at bedtime. In addition to these internal means, the whole surface of the body and limbs should also be bathed or sponged with a mixture of Alcohol and water, to which some Oil of Cinnamon, Tannic Acid, or fixed Oil of Capsicum has been added; and this should not be pushed so far as to produce rubefaction, but only an agreeable glow and dryness of the skin. In some cases, a mixture of Acetic Acid, water, and Tannic Acid, may be used as an application to the body. The flannel which is worn next the body may, in many instances, be moistened with the Tincture of Capsicum, or other stimulant, and when dry, be worn; or, it may be sprinkled from time to time with the following:—Take of Capsicum one drachm, Wild Ginger half a pound, Canella Alba one pound; mix these, in powder, intimately together.

When diarrhea is present, it must be checked by some astringent preparation, as an infusion of Blackberry root, Geranium, or Marsh Rosemary; the use of Tincture of Muriate of Iron; or, teaspoonful doses of equal parts of Paregoric and Tincture of Catechu. In some cases, Camphor, Opium, Tannic Acid, Kino, equal parts of each, may be given in three or four grain doses, and be repeated as often as the symptoms require. Other agents have been recommended, and may be tried in obstinate cases, as Trisnitrate of Bismuth, Solomon's Seal and Tincture of Prickly-Ash berries, and the following injection:—Take of Tincture of Nux Vomica three fluidrachms, Tincture of Prickly-Ash berries four fluidounces; mix, and add one teaspoonful to a table-spoonful of a strong infusion of equal parts of Solomon's Seal and Golden Seal, for an injection. The injection may be repeated two or three times a day. I have known a solution of Sulphate of Iron four drachms in whisky half a pint, to have a beneficial effect in this disease, relieving cough, checking night-sweats and diarrhea, and imparting strength to the patient, in doses of half a teaspoonful every two hours. But I am not yet prepared to say whether these effects were transient or permanent.

When bleeding of the lungs occurs, the patient may drink freely of an infusion of equal parts of Beth root and Bugle weed. Or, equal parts of Tincture of Rhatany, Tincture of Cinnamon, and Oil of Turpentine, may be administered in half-teaspoonful or teaspoonful doses, and repeated as

often as required. When the hemorrhage is slight, a little salt and water will often check it. When the bleeding is profuse, ligatures to the limbs will sometimes prove serviceable. See Hemorrhage from the Lungs, page 454.

Other symptoms must be met by appropriate treatment, giving bitter tonics and aromatics for deficiency of appetite and digestive power, as Tincture of Gentian made pungent by the addition of Tincture of Grains of Paradise; diuretics for deficient action of kidneys, &c.,—remembering, that in the whole treatment great care must be taken not to disquiet, or oppress the stomach in any way—endeavor to counteract and overcome, as far as possible, all the various and diverse morbid symptoms of the case, of whatever nature they may be, by such remedies, so managed, as will accomplish it the most effectually without producing at the same time any undesirable effects.

I have said nothing of Cod-Liver Oil, not because I deem it useless, but that it is almost impossible to obtain a pure article; and from this fact, patients will do better without the article altogether, than to run the almost certain risk of having a spurious article imposed upon them. When a pure article of Cod-Liver Oil can be had, it will be found efficacious, and may be given in teaspoonful doses twice a day, gradually increasing the dose to a table-spoonful three times a day. To obviate the unpleasant taste it may be taken in Brandy and water, or Gin, or in infusion of Walnut leaves. To some, it proves palatable when taken in the milk of Coconut, which by the way is a useful liquid for consumptives. If a piece of Orange peel, Lemon peel, or Cinnamon bark be chewed after taking the unmixed Oil, it will lessen any remaining unpleasant taste.

In the incipient stage of consumption much benefit may be derived from the use of electro-magnetism, currents of which may be passed through the affected parts once or twice daily, continuing their application each time for fifteen or thirty minutes. In the latter stages, not much benefit can be anticipated from it; and I think I have met with cases in the advanced stages when its employment has been productive of decided injury.

Before closing this subject, I will make a few remarks for the consideration of scrofulous and consumptive parents. The major part of persons who inherit the tendency to consumption, are frequently beyond hope before they are aware of danger, for it is seldom a physician is applied to until cough, difficult breathing, spitting of blood, &c., takes place, and which symptoms in these inherited cases are almost positive proof that if not absolutely incurable, yet the disease is bordering on incurability, and more especially if the patient be round-shouldered, narrow-chested, with elevated or winged-like shoulders, &c. Notwithstanding this, it is a singular fact that the majority of parents whose offspring inherit a scrofulous or consumptive tendency, bestow little or no attention to the subject, until the disease becomes active and manifests itself beyond a doubt, and then, in most cases, it is too late for a cure to be effected. Such children usually evince a great fondness for study, and are apt to improve rapidly: the parents encourage them, and take pride in that which too certainly leads to a premature grave.

If parents fully understand this matter, and if physicians would do their duty they would make them acquainted with it, they would know that active and continuous mental efforts, and more especially in scrofulous children, tend to impair the physical forces and lead to rapid dissolution; and that the proper and only cultivation which such children require is, *of the body—its health, its strength*—and instead of sending them to a school for

study and exercise of the brain, they would prefer one where exercise and amusement, applicable to the child, were taught exclusively, together with such knowledge as could be derived from a careful *play*, not close study, of the reflective and perceptive faculties. Such a course persevered in for twelve or fifteen years, with the proper remedial measures, would effectually cure the disease, destroy the inherent disposition to it, and be the means of prolonging a life, which, as at present guarded, is certain to terminate in a few years. With regard to the mental improvement of children thus trained, there need be no uneasiness, for by such a course much, very much, will have been learned already; and, at the age of fifteen or eighteen years, the system having become healthy, and the brain strengthened and matured, they will be able to learn from books much faster, be less liable to forget their studies, comprehend more readily, feel more interested in the acquirement of knowledge, and better than all, have more healthy constitutions than our present method of raising children has ever been, or ever will be able to effect. I believe it is a fact, that generally speaking, persons who commence their studies at the ages of sixteen or eighteen, become much better informed, and prove better scholars, than those who commence in early life.

Let us suppose a child of consumptive parents, who, as manifested by his general appearance, will certainly have an attack of the disease at an early period of his life. The question is asked, Can the child be cured? I unhesitatingly reply, not only can he be cured, but the inherited disposition can be thoroughly removed, for I am firmly of opinion that all persons disposed to tuberculous disease of whatever nature can be permanently and radically cured by proper treatment. And this proper treatment does not consist in waiting until the disease has become active in adult age, and then commence medication, but to apply the remedies during childhood, commencing at the third or fourth year, administering medicinal agents to remove the disease, with gymnastic sports to overcome the peculiar unhealthy form of the body, whatever that may be, and to strengthen and invigorate the constitution, and other sanative measures, continuing them until the individual has reached the maximum of growth. An institution for this purpose could be established, where not only the above views could be effectually carried out, but in which the person could receive a liberal education, without ever having had a book in his hand—study being made a matter of exercise and amusement, instead of a *task*. If it is desired to alter the form of a tree, do we wait until it has reached maturity, or do we not rather commence to work and mould it to the fashion we require while yet a mere twig? So must we commence in childhood to alter the peculiar form, predisposition, &c., of a consumptive or scrofulous individual, at the same time using appropriate medication to destroy the tendency to disease. If parents and the community generally were not so much devoted to self and the acquirement of wealth—if they would bestow more attention to the health of their offspring while young, and were not so anxious to impair their energies by overburdening their mental faculties, keeping them in a constant state of nervous excitability by studying and fretting over books at school and at home, there would be less deaths among children, and fewer cases of consumption even among those of consumptive parents, and instead of a puny, sickly, imbecile race of men, our country would be able to boast of citizens powerful in the physical, and gigantic in the intellectual. This is a subject which demands the serious consideration of every member of the human family.

DISEASED MESENTERIC GLANDS.

THE Mesenteric Glands of scrofulous children, are frequently affected with an enlargement, and accompanied with symptoms to which the name *Tabes Mesenterica* has been given. There is a deep-seated, lancinating pain in the abdomen, which gradually enlarges, while the rest of the body becomes emaciated; the bowels are generally loose, with discharges of a milky or chalky appearance, and sometimes frothy. The appetite is good, often voracious, but no health or strength is derived from the food eaten. As the disease advances, the child becomes inactive, peevish, and fretful; the skin is dry and rough, sometimes scaly; the thirst not much above natural; the tongue coated white, and its body pale; the pulse from 100 to 120 in a minute, and an accession of fever toward the after part of the day. Toward the termination of the disease, dropsical swelling of the feet and ankles are common. This disease is also popularly termed "Consumption of the Bowels."

CAUSES. The causes of this disease are the same as those which excite scrofula into action, as deficient or improper food, unhealthy residences, irritation of the lining membrane of the intestines, too early weaning, &c.

TREATMENT. Keep the bowels regular by doses of Rhubarb and Bicarbonate of Potassa, the skin healthy by daily bathing and frictions; and sustain the strength by a plain, unstimulating, but nutritious and easily digestible diet. To remove the scrofulous taint, pursue the same constitutional measures as recommended in Scrofula. Excessive acidity of stomach, or irritability of the bowels, may be remedied by a drink of equal parts of Lime-water and Milk; it may be made more palatable by sweetening it, and adding a little Cinnamon, or, if there is much debility, a little Brandy. The hygienic means named in scrofula, must be adhered to in this. Among very young children, I have found advantage from the use of the following preparation:—Take of Compound Syrup of Yellow Dock, Tincture of Black Cohosh, Worm Cordial, (on page 431,) each, equal parts; mix. The dose is from a teaspoonful to a table-spoonful three or four times a day.

WHITE SWELLING.

WHITE Swelling, or Hydrarthrus, is a very formidable and painful disease, affecting various joints, but more especially the knee joint. The term "White Swelling," is applied to it because, notwithstanding the inflammation, and the enlarged condition of the joint, the color of the skin surrounding it remains natural. Children, particularly those of scrofulous habits, are more especially subject to it, though adults are by no means exempt.

SYMPTOMS. At first there will be more or less swelling of the knee, which gradually increases, with a sense of uneasiness in the joint. Slight pain is soon felt which may continue for a longer or shorter time, but eventually it becomes very severe. Sometimes the pain is the first symptom which attracts the patient's notice. It becomes so intense that the patient cannot bear to move; he does not place the sole of his foot firmly upon the ground, but merely touches it with his toes, while the knee-joint is kept constantly flexed. The center of the joint appears to be the most affected part, and the greatest pain is produced at this part upon pressure over a space not more than half an inch in diameter. As the pain increases, so does the swelling, and the skin presents a smooth, white, shining appearance, with enlarged veins running through it. A great sense of heat in

the part is experienced. The joint may continue in this state for months, or years, without any considerable change, or it may proceed rapidly to suppuration. Finally, collections of matter form round the joint, and a number of openings are produced through which the matter is discharged. Sometimes the ulcers formed heal, but more generally other ones succeed. The affected limb wastes, and becomes permanently flexed; the patient gradually emaciates, and there is much constitutional disturbance, with bad appetite, sleeplessness, small and frequent pulse, hectic fever, night-sweats, and frequently an obstinate diarrhea. Under the great irritation thus effected in the system, the patient gradually succumbs.

TREATMENT. In the early part of the disease, before ulceration has taken place, and when there is pain and swelling, it will be proper to cup the whole surface of the joint; after which the joint should be exposed to the influence of the hot vapor arising from the following decoction:—Take of Hops, Wormwood, Lobelia, and Stramonium, each equal parts, make a strong decoction, and expose the joint to its vapor, which may be confined to the part by throwing a blanket over both the limb and the vessel containing the decoction. This having been done, apply the Compound Tar plaster. This plaster must be respread every day, and its use continued until it has effected a free discharge from the surface of the swollen joint; and at each dressing, the limb may be exposed to the action of a vapor of a decoction of Bitter Herbs, as above, for fifteen or thirty minutes each time. After some twelve or fifteen days, there will commonly be a subsidence of the pain and swelling, when the sore produced by the plaster may be allowed to heal; after which rub the limb twice a day with a stimulating liniment, as, for instance, the Compound Tincture of Camphor, and bandage the joint as tightly as the patient can comfortably bear—or, if any soreness should remain in the joint, apply a poultice of Hops, Lobelia, Wormwood, and Stramonium, infused in some hot, weak ley water, and continue this course until all the pain and swelling have disappeared.

If the joint has supplicated, and ulcers have formed, with one or more openings, these should be washed or syringed one or twice a day with some Castile Soap suds, and immediately afterward with a solution of the Vegetable Caustic, as strong as the patient can bear; and any great amount of pain may be lessened by a continuation of the local vapor bath. This caustic treatment should be continued as long as ulceration continues, or as long as any pieces of diseased bone are discharged. Occasionally, a solution of Iodide of Potassium, injected into the openings, will be found advantageous.

In whatever stage the disease may exist, local measures will effect no permanent benefit, unless constitutional means be at the same time instituted. The Compound Syrup of Yellow Dock, or the Compound Syrup of Stillingia, with Iodide of Potassium added to either, must be administered three or four times daily; and in cases of marked strumous diathesis, the Iodine pills should likewise be given. If the patient be very much debilitated, his strength must be sustained by a nourishing, easily digestible diet, and by the use of half or full wineglass doses of Red Peruvian bark two ounces, Port Wine one quart. This is a troublesome disease, frequently requiring several months before any permanent benefit can be effected.

HIP DISEASE.

HIP DISEASE is of a character similar to white swelling, the treatment will be the same, with the exception that from the difficulty in exposing the part to vapor, it will be better to apply a fomentation of the articles directly over the painful part—placing them also over the Compound Tar plaster, which should be applied on the first manifestations of the disease. In both these affections, the bowels should be kept regular by mild laxatives, and the kidneys should be maintained in a state of healthful action, by means of diuretic infusions, whenever required.

RICKETS.

RICKETS, or Rachitis, is a disease in which the bones become softened in consequence of a deficiency of the calcareous or earthy deposits natural to them, and is generally met with among scrofulous children. It may be caused by debility, want of exercise, deficient food, impure air, damp and cold residence, uncleanness, and bad nursing.

SYMPTOMS. The disease generally manifests itself gradually, the flesh becomes flabby; the body emaciated, but with a prominent belly; the countenance becomes pale, and the face appears swelled or bloated; the head appears unusually large, and the neck small; teething takes place very slowly, and the teeth that have appeared are liable to fall out; the bones being soft and unable to support the body, curve unnaturally in various directions, especially those upon which there is much pressure, or upon which is exerted a long-continued action of the muscles; the ribs become flattened, or lose their convexity; the breast-bone projects; the spinal column becomes curved, somewhat in the form of the letter S, and various other distortions of the bones occur; the joints become much enlarged, while the limbs between the joints appear very slender. Deformity of the female pelvis is sometimes owing to this disease in early life. Most generally, rickets commences in the bones of the legs, and gradually extends to the pelvis, spinal column, ribs, &c. If the child is not eventually destroyed by great constitutional derangement, and should live to adult age, the diseased bones eventually become very firm and solid, but the deformity remains.

TREATMENT. When a child is afflicted with rickets, it should be placed in the recumbent position, and continued thus nearly all the time, keeping it as quiet as possible; the bed on which it lies should not be too hard, nor so soft as to yield much to the weight of the body. If, instead of feathers, hair, &c., the bed be composed of equal parts of the leaves of Dogwood and Sweet Fern, it will be found to have a very salutary effect. Frictions and bathings of the whole surface will also be a necessary part of the treatment; a solution of Salt in water, or in Brandy, may be used for these purposes. A good animal diet should be allowed; the bowels should be kept regular daily, without active purging; and as a constitutional and curative treatment, the following internal medicines must be exhibited:—Take of Buckhorn Brake roots two ounces, Solomon's Seal one ounce, Comfrey root half an ounce, bruise these roots, and add sufficient boiling water to them to form a paste or mucilage somewhat thicker than the white of egg. Add to this, when prepared, the following mixture:—Take of the root-bark of False Bittersweet, Yellow Dock root, Prickly-Ash berries, Caraway seed, each, in fine powder, half an ounce, White Sugar one pound, good French Brandy a pint and a half. Let the whole stand for several days before using it,

frequently shaking it,—or, it may be used at once, by first heating it to nearly the boiling point, and then allowing it to cool. The dose is from a teaspoonful to a wineglass half full, depending upon the child's age, to be repeated every three or four hours, through the day.

In addition to this the whole spinal column, as well as the affected joints and limbs, should have some stimulating preparation applied to them two or three times a day. The Compound Tincture of Camphor may be used for this purpose, or a liniment composed of two parts of Linseed Oil, and one part each, of Oil of Origanum, Oil of Sassafras, Oil of Wintergreen, and Camphor; rub them thoroughly together in a mortar. If children laboring under rickets are permitted to creep or walk too soon, a permanently deformed pelvis may ensue; it is more especially necessary to attend to this among female patients.

CARBUNCLE.

CARBUNCLE, or **Anthrax**, is a malignant boil, which seldom suppurates, but discharges a thin acrid humor, and exhibits a great tendency to gangrene or mortification.

SYMPTOMS. Carbuncle commences with great heat and pain in the affected part, and also more or less itching; a small pimple will be observed which extends deeper and deeper, forming a circumscribed, deep-seated, and very hard tumor. Not unfrequently the patient will suffer from the commencement with chills, nausea, faintings, great prostration, weak pulse, &c. As the tumor progresses it soon becomes of a dark-red or purplish color at its middle, but of a lighter shade toward its margin. A small vesicle or blister forms on the top of the tumor, which, on account of the excessive itching produced, is liable to be scratched by the invalid, and which, when broken, discharges a thin, acrid, dark-colored fluid, excoriating the parts with which it comes in contact. As the disease progresses several of these openings are formed. Carbuncles proceed very rapidly to a state of gangrene; and it is very common for internal sloughing to have made considerable progress even when no external signs of mortification are present. The tumors may be of various sizes, from half an inch in diameter to five or six inches, or even larger.

Middle aged persons, and especially those whose constitutions have been impaired by intemperance, debaucheries, &c., are more frequently attacked; and it is more generally located on some part of the back. Close study, trouble, mental depression, bad food, &c., have also been named among the causes.

TREATMENT. Apply Caustic Potash freely to every part of the tumor, and when there are apertures pass the caustic within them. After this apply a poultice made of equal parts of powdered Marshmallow, Wild Indigo leaves, and leaves of Ground Centaury (*Polygala Nuttallii*). This poultice should be frequently changed, reapplying the Caustic at each fresh dressing, until the parts slough off, and a healthy appearance is assumed, when the ulcer left may be healed as an ordinary ulcer. The odor emanating from the carbuncle is very offensive, and may be removed by the application of Pyroligneous Acid, or Yeast and Charcoal, and either of which may be added to the above poultice.

In addition to these local means, the general system must be sustained by tonics and nourishing diet. Take of Red Peruvian bark one ounce, Ground Centaury half an ounce, wine or whisky two pints; mix. The patient may

take a wineglassful of this two, three, or four times a day. Ale, porter, &c., may also be used as tonic stimulants. The bowels must be kept regular, but care should be taken not to debilitate by any active medication. The Tincture of Muriate of Iron will sometimes be found very beneficial as an internal agent. Elixir Vitriol and Sulphate of Quinia will frequently lessen the constitutional sufferings.

PURPURA HEMORRHAGICA.

PURPURA HEMORRHAGICA, sometimes termed Land Scurvy, consists of livid spots on the skin from extravasation of blood, of different sizes, and irregularly scattered over various parts of the person. There are two forms of this affection, one termed Purpura Simplex, in which the petechial spots are small like flea-bites, distinct, purple, and commonly distributed on every part of the body, being accompanied with languor, debility, yellow coat on tongue, nausea, impaired appetite, constipation, &c., and which may be readily cured by pure air, nourishing food, regular exercise, use of wine, Quinia, and the mineral acids. The most dangerous form is the one under consideration—Purpura Hemorrhagica.

SYMPTOMS. Purpura Hemorrhagica may come on suddenly, or it may be preceded for some time by great debility, pains, and faintness, rendering the patient incapable of any exertion. The petechial spots are frequently quite large, resembling the marks left by a severe bruise, and are more commonly met with on the limbs and body, the face usually being free from them, or nearly so. Blood frequently issues from the mouth, gums, nostrils, lips, tongue, ear, urethra, vagina, &c., and sometimes profuse, and even dangerous bleedings take place from the stomach, lungs, bladder, womb, &c. The slightest pressure on any part of the surface of the body will produce a purplish blotch like those already present. Accompanying the disease will often be extreme debility, depression of spirits, feeble or rapid pulse, febrile symptoms, deep-seated pains in various parts, constipation, emaciation, bloating of the feet and legs, impaired appetite, &c.

CAUSES. These are but imperfectly known. Its duration varies very much; in some instances it disappears in three or four days; in others, it may remain for months, and even years, eventually causing death by a sudden and profuse discharge of blood from some important organ, as the stomach, lungs, womb, &c., or by a less profuse but constant discharge from two or more organs simultaneously.

TREATMENT. I have never met with but three cases of this disease in the whole course of my practice; one was a young girl about fifteen years of age with suppression of the menses, the others were females further advanced in years. In the first case I administered a dose of the Compound Powder of Jalap, and after it had purged moderately, the following was given:—Take of Sulphate of Iron, Cimicifugin, each, forty grains, Podophyllin ten grains, Extract of Gentian a sufficient quantity to form the whole into a pill-mass; mix, and divide into forty pills, of which one was administered every two hours. In the other two the same medicines were given, with the exception that Kino was substituted for the Cimicifugin. A very nourishing diet was used, wine and brandy were ordered in moderate proportions, light exercise taken regularly every day in the open air, and the period of sleep was confined to nine hours in every twenty-four. Cheerful society was recommended, and a total neglect of all household or other cares and duties. The skin was bathed daily with tepid water made slightly pungent with Tincture of Capsicum. All the cases were cured. 31

Among the internal remedies which have been recommended in this disease, and which may be of benefit, are:—Tincture of Muriate of Iron in doses of from ten to twenty drops, in water, and repeated four or five times a day; Gallic Acid five grains every three or four hours; Alum ten or twenty grains in some astringent vegetable infusion or decoction; and Oil of Turpentine in doses of half a drachm, added to a similar quantity of Castor Oil, and six drachms of Peppermint Water; to be repeated three, four, or more times a day. When blood is passed with the urine, use astringent diuretics. (See Hemorrhage from the Bladder, page 456.)

SCURVY.

SCURVY or Scorbutus, is a disease in some respects resembling the preceding, but differing entirely from it both in its nature and the treatment proper for its cure. It was in former times met with frequently in camps, in besieged towns, and in vessels making long voyages, but is less common at the present day, owing to the great improvements which have been made in relation to diet. It may occur in all climates, and on land as well as at sea—among persons who use fresh meats as well as those who eat salt meats; and especially when exposed to the several exciting causes which favor an attack of the disease, by impairing the energy of the nervous forces.

SYMPTOMS. Scurvy manifests itself gradually; the commencing symptoms are a general debility both of the mental and physical powers, with fatigue on the slightest exertion, and a difficult or hurried breathing. The face assumes a pale or sallow and bloated appearance, and as the disease progresses becomes of a dusky hue; the gums are soft, spongy, of a purple or dark color, and bleed easily; the teeth become loose; the breath is offensive; dark, purplish spots appear in various parts of the body; bleedings take place from the nose, throat, stomach, bowels, and other mucous surfaces; hard tumors appear on the limbs and jaws, occasioning considerable pain; the joints become swollen and stiff; severe wandering pains are felt, particularly at night; the skin is dry; the pulse is small, feeble, and generally slow, occasionally frequent, and in the last stages intermittent; the bowels are usually constipated, but sometimes loose, with dark, clotted blood in the discharges; the urine is scanty, high-colored, and sometimes colored with blood; and as the disease advances the patient becomes more and more prostrated. Not unfrequently old wounds, which have long been healed up, break out afresh, and eruptions upon the surface of the body, frequently discharge blood, or are converted into malignant formations. Death occurs from extreme prostration, profuse, bloody discharges, diarrhea, or, perhaps, from mortification of the bowels.

The disease is very variable, generally progressing gradually, but sometimes appearing very suddenly, and with great malignancy. The intellect generally remains clear and distinct to the last.

CAUSES. The theories in relation to the cause of scurvy have heretofore been varied and conflicting. The disease was at one time thought to have been owing to the use of stale or salt provisions, but facts appear to have disproved this view, and to have proven that a deprivation or deficiency of certain succulent and acescent vegetables containing ingredients required for the healthy composition of the blood, will give rise to scurvy; and more especially when in connection with this the patients are exposed to causes which depress the nervous energy, as exposure to cold and moisture, indolence, confinement, want of exercise, uncleanness, excessive labor and

fatigue, sadness, despondency, &c. According to Dr. Baly, a diet deficient in succulent vegetables continued from three to six months, will fully develop the disease.

Scurvy may be *discriminated* from purpura hemorrhagica, by the dusky, sallow hue of the skin, the sponginess of the gums, the indurated and painful swellings about the jaws and limbs, and the hard and unyielding livid blotches met with in scurvy, and which are absent in purpura. In purpura, the blotches are soft and impressible, and the joints are not so fixed and inflexible as in scurvy. In purpura the blood contains a great diminution of fibrin, and are scarcely coagulable; while in scurvy the salts of this fluid and fibrin is very much increased, the blood-corpuscles are greatly diminished, and the blood is coagulable; the albumen is also increased. Scurvy more usually appears in the end of Winter or beginning of Spring; purpura is most common in Summer and Autumn.

TREATMENT. Very little medicine is required in the treatment of scurvy, except for the purpose of overcoming urgent symptoms. A proper change in the diet is the most important, and indeed the only curable measure. Fresh succulent and acid fruits must be administered freely, as oranges, lemons, limes, unripe grapes, apples, strawberries, gooseberries, pine-apples, and similar articles. Radishes, and water-cresses, eaten raw, turnips, and the sour-kROUT of the Germans, are all valuable against the attacks of scurvy. The potato boiled, or in its raw state, grated, and eaten with vinegar, has also been found to possess most valuable antiscorbutic properties. In the absence of the above vegetables, a solution of Citric Acid, sweetened, and, if required, added to some Wine, or Porter, may be substituted with advantage; for it is to this acid that many of the above fruits owe their antiscorbutic virtues. Nitric Vinegar, made by dissolving from two to four ounces of Nitre in a quart of Vinegar, has also been found an excellent remedy; it should be used in half-ounce doses, considerably diluted with water, repeating the dose two, three, or four times a day. As for medicines, should there be obstinate constipation, some Cream of Tartar may be taken in Tamarind water; or, a dose of Castor Oil may be given in some Lemon juice or a weak solution of Citric Acid. If diarrhea be present, an infusion of Blackberry root, Geranium, or other astringent may be given; or, the Tinctures of Kino, or Catechu, with or without the addition of Paregoric, will frequently be of service. If the stomach is acid, the Compound Powder of Rhubarb and Potassa may be exhibited. Pains of the abdomen may be relieved by warm fomentations; sponginess and bleeding of the gums with looseness of the teeth, may be removed by washing the gums and teeth freely with a mixture composed of equal parts of Tincture of Rhatany, Tincture of Red Peruvian bark, and Tincture of Myrrh; at the same time, having the patient to chew some grated raw potato, with or without the addition of Lime or Lemon juice. Obstinate and foul ulcers may be washed with Lemon juice, or the above mixture, and then dressed with a poultice of Sorrel leaves, or a Yeast poultice—a Cranberry poultice will be found excellent. Sleeplessness may be removed by the use of Lupulin, Lactucarin, Scutellarin, Valerianate of Quinia, Cypripedin, &c.

The patient should be cautioned against any sudden movement or exertion, as these have frequently been followed by immediate death; but as strength returns, moderate exercise will prove of advantage. He should be kept clean, bathing the surface daily, and have a constant supply of fresh air. The diet should be generous and nutritious, consisting of soups, broths, eggs, milk, and mashed potatoes, at least, until the condition of the

teeth and gums will admit of more solid food. Spinage, lettuce, parsley, dandelion, wild sorrel, garden-cresses, &c., with the addition of the above named fruits and vegetables must be used; the rhubarb or pie plant is also beneficial. For drink he may use wines, ale, porter, whey, buttermilk, cider, spruce beer, infusion of the tops of the spruce fir, lemonade, &c. And as soon as the condition of the system will permit, that is, after considerable benefit has been derived from the acid vegetables, the Tincture of Muriate of Iron may be given in doses of twenty or thirty drops, three times a day, in an infusion of Golden Seal, Gentian, or Quassia.

YAWS.

YAWS, or *Framboesia*, is a disease supposed to have been imported from Africa, and which is common to negroes on sugar plantations, especially in the West India Islands. It is propagated by frequent contact with those affected by it, or, by inoculation with the matter from a yaw pustule or sore, and which it is said the negroes frequently perform in order to obtain an exemption from labor. The white people sometimes become tainted with the disease, particularly those who are frequently in attendance upon the diseased blacks.

SYMPTOMS. The disease is preceded by pains in the limbs, somewhat resembling rheumatism, and which are severe especially around the joints; languor and debility are usually present. After a time febrile symptoms, as chills, pains in the limbs, back, and joints, headache, fever, and loss of appetite, manifest themselves; these are succeeded after a few days by a pustular eruption on various parts of the body, particularly the forehead, face, neck, arm-pits, &c. At first these are not larger than a pin's head, but gradually enlarge until they are half an inch or more in diameter; they are filled with an opaque, whitish fluid, and discharge, when they burst, a thick, glutinous matter, which forms a thick and disagreeable scab. These pustules do not cover the whole body at any one time, nor do they appear in regular succession like the eruption of small-pox; but when one crop is passing away, a new one is appearing in another place, each crop being attended with febrile symptoms. From the larger pustules a rough, mulberry-looking fungous excrescence is apt to arise, discharging an unhealthy viscid fluid, and which forms a scab around the edges of the excrescence. When any part of the body covered with hair is attacked with the eruptions the hair gradually changes from a black to a white color. The disease may last from four weeks to three months, according to the state of the system. It frequently causes foul and sloughy ulcers of considerable extent, and, sometimes, even caries of the bones. The disease occurs but once in a lifetime.

TREATMENT. As soon as it is ascertained that the negro has the yaws, he should at once be removed to some private place where he can have no communication with those who have never had it, otherwise it may be propagated over a whole plantation. In the early stage of the disease, before the eruption has fully appeared, some diaphoretic should be given, as the Compound Tincture of Virginia Snakeroot, and the patient may likewise drink freely of a decoction of Sarsaparilla, Guaiacum shavings, Sassafras bark, and Elder flowers. The body should be bathed daily with a warm, weak alkaline bath, and the diet should be strictly vegetable. The clothing should be warm and comfortable, and moderate exercise be taken daily. And this course may be pursued until the second stage comes on.

In the second stage, when the eruptions begin to dry off, mild purgatives should be given to keep the bowels regular, and the Compound Syrup of Sarsaparilla, or the Compound Syrup of Stillingia may be administered, in doses of two or three fluidrachms, repeated several times a day; and this should be continued until all the scabs become thoroughly dry, and fall off. Should a foul ulcer remain, the Compound Ointment of Oxide of Zinc may be applied to it; or, an ointment composed of the Subcarbonate of Iron with Citric Acid and prepared Lard; the ulcer may frequently be washed with the Tincture of Muriate of Iron. The sole of the feet, consisting of thick cuticle, is apt to confine the discharge, when the yaws attacks this part, thereby producing extensive and obstinate ulceration of the feet, rendering it painful to walk. The best application in such cases, is, a poultice of the fresh Cassava root, which is common to the West Indies; or, a dressing of the Red Oxide of Lead plaster, with a poultice of Elm and Poppy leaves. Any hard swellings which remain on the feet, may be removed by bathing the feet in warm water until the swellings become somewhat soft, and then touch them with Caustic Potash, to produce an eschar and sore, dressing it with an Elm poultice, to which yeast may be added, if necessary.

NEGRO CACHEXY.

NEGRO Cachexy, or Cachexia Africana, is a disease of the nutritive functions, which attacks negroes of the South and of the West Indies, in which there is a great propensity for eating earth. It presents many symptoms resembling Chlorosis, which, however, differs from it, as males and even young children are affected by it.

SYMPTOMS. The patient indulges in grief, depression of spirits, seeks solitude, is drowsy, inactive, much debilitated, and is both unwilling and unable to perform labor. There is a loss of appetite; constant pain in the stomach; difficult breathing, especially on the least exertion; palpitation of the heart; paleness of the lips, face, and palms of the hands; whiteness of the tongue, with dark, ink-like spots upon it; the conjunctiva is glossy white; the skin cold, and of an olive color; the face, eyelids, and extremities appear edematous or bloated; the stools are of a white or clay color; the urine is scanty; and the pulse is small, being commonly quicker toward night. When there is a collection of water in the cavity of the abdomen and chest, the patient can only breathe in the erect posture. Acidity of the stomach is present, occasioning a disposition to eat articles which will neutralize the acidity, as earth, chalk, &c. As the disease progresses, the lymphatic glands become indurated and inflamed; the liver enlarged and hard; the blood poor, colorless, and its red globules diminished; and death occurs suddenly, by asphyxia.

CAUSES. The disease arises from a want of proper energy in the system, induced by grief, despondency, harsh treatment, bad food, excessive labor, &c. With some it is occasioned by an inactive, indolent life, and sometimes it appears to be constitutional. Badly nursed children are liable to its attacks.

TREATMENT. The patient must be placed upon a generous and nutritious diet, animal food, eggs, ale, porter, &c.; the body should be bathed daily with a slightly acidulated wash, drying it with considerable friction; a wash of Vinegar, Salt, and Capsicum will be found very useful. Moderate exercise should be taken daily; cheerfulness should be encouraged, and the clothing must be warm, but adapted to the season. Cold and damp

air, night air, pork, the fat of meats, and fatiguing exercise must be avoided; a pure, dry air, of moderate temperature is by far the best.

Costiveness must be obviated by the Powder of Rhubarb and Bicarbonate of Potassa, mentioned under Indigestion, page 399; or, by Podophyllin and Leptandrin; or, by the Compound Tincture of Tamarac, which will be found very valuable as a tonic, laxative, and alterative. In conjunction with this, some preparation of iron should be used to restore the blood to a normal condition, as the Iodide of Iron, Carbonate of Iron, Iron by Hydrogen, &c. The urinary organs must be attended to, giving stimulating diuretics whenever the urine is scanty, as an infusion of Queen of the Meadow, the Compound Infusion of Parsley, or the Compound Infusion of Trailing Arbutus.

Negroes frequently present very peculiar and singular symptoms, many of which cannot be accounted for, but which they attribute to poisoning. I have treated many of these cases, and find no remedy equal to that of a combination of Rock Salt two parts, Capsicum one part; mix. The dose of this varies from a teaspoonful to half a table-spoonful, every two or three hours; at the same time making use of external means to produce copious sweating. This course must be repeated every day or two, until the cure is effected.

BRONCHOCELE.

BRONCHOCELE, Goitre, or Swelled Neck, sometimes called Big Neck, is a tumor on the forepart of the neck or throat, formed by an enlargement of the thyroid gland. The progress of this swelling is usually extremely gradual, and the skin will retain its natural appearance for a long time. It is very common among the inhabitants of certain mountainous districts, in whom it occurs endemically, but isolated cases are met with in every section of the globe, especially in moist places. Females are more subject to bronchocele than males, and it will not unfrequently be found associated with some derangement of the uterine functions, a restoration of which to a healthy condition will very much hasten the disappearance of the bronchocele. The cause of this disease is not understood, though many reasons have been assigned for its production, as the use of snow water, or some particular saline or calcareous impregnation of the water in common use as a drink. The predisposition to the disease is often transmitted from parent to child.

SYMPTOMS. The swelling takes place on one or both sides of the wind-pipe, is at first without pain, without any fluctuation, and without any change in the natural color of the skin. As the tumor increases in size it grows hard and irregular; sometimes it extends back on each side of the neck so regularly as hardly to appear like a well marked tumor. It generally increases slowly, and not unfrequently it will remain stationary for a number of years, and then commence growing again, attaining an enormous size, and interfering with breathing. In most cases, the tumor is soft or spongy at first, and not sensible to feeling, but as it enlarges, it acquires a great degree of hardness, the skin assumes a brownish or copper color, and the veins are varicose or knotty. The face is subject to flushings; and headache and shooting pains through the tumor are not uncommon. With a few persons the disease does not prove deleterious, although the deformity caused by it is of a painful and mortifying nature; usually, if it be allowed to continue, the constitution gradually fails, and the patient dies.

TREATMENT. I have cured several cases of this disease with the Iodine pill, made as follows:—Take of Iodine half a grain, Sulphate of Morphia one-eighth of a grain, Burnt Sponge one grain, Extract of Liquorice enough to form the whole into a pill. One of these pills is a dose, which may be repeated two or three times a day. In conjunction with this, a strong electro-magnetic current must be passed through the tumor daily. The Compound Plaster of Belladonna should likewise be worn constantly over the tumor. I have seen the Compound Tar Plaster used in many instances of Bronchocele, but have not yet observed any benefits arising from it, although several experienced practitioners have recommended it very highly. The general hygienic measures must be similar to those named in scrofula. When possible, a change of residence to a dry, pleasant spot will be advantageous. Water, boiled, and then allowed to cool, will afford the best fluid for drink. When bronchocele is of long standing, the tumor very large, with large bloodvessels passing over various parts of it, a cure will be found very difficult; the earlier treatment is commenced, the greater will be the chance of its removal.

ENLARGEMENT OF THE HEART.

ENLARGEMENT, or Hypertrophy of the Heart is an unnatural growth or increase of its fibrous or muscular structure, generally confined to the left ventricle, and sometimes affecting the right, and, occasionally, the auricles. The enlargement may exist alone, not increasing the size of the cavity of the affected portion, or, it may exist with a diminution or augmentation of the cavity; hence the names, *simple hypertrophy*, *hypertrophy with contraction*, and *hypertrophy with dilatation*.

SYMPTOMS. There is shortness of breath on the slightest exertion; palpitation of the heart, frequently so severe as to jerk the whole body; and often an uneasiness around the region of the heart. Not unfrequently, headache, giddiness, ringing or buzzing in the ears, flashes of light, flushed and swelled face, nose-bleeding, and a very hard and strong pulse are accompanying symptoms. The stomach, liver, lungs, and kidneys eventually become implicated; there will be a dry skin; deficient and high-colored urine; swollen and purplish appearance of the face and extremities; cough; and the patient finally is forced to remain in an upright or sitting posture, with the body leaning forward, on account of the extreme difficulty of breathing. If death does not occur suddenly, the vital powers gradually fail, coma and insensibility come on, and the patient dies. When there is no dilatation with the hypertrophy, the pulse will be full, strong, and forcible, shaking the whole body at every pulsation, with frequent paroxysms of giddiness, headache and nose-bleedings. When there is dilatation, the pulse will be more feeble, and the countenance of the patient paler, the lips purplish, faintness, edematous swelling of the feet, and great difficulty of breathing. Certain sounds are conveyed through the stethoscope in this disease, which enables the cultivated ear of the physician to more readily determine its correct character.

CAUSES. Whatever tends to over-stimulate the heart, thereby producing eventually a diminution of its power, and a softening and enfeebling of its fibrous structure, may occasion this disease, as indulgence in intoxicating liquors, violent and long-continued muscular exertion, mental depression, or great excitements, excessive venery, masturbation, rheumatic, gouty, and syphilitic affections, intense study or application of the mind with little or no bodily exercise, &c.

TREATMENT. Hypertrophy of the heart is very difficult of cure, the chances being much greater in early life, than among those who have advanced in years. The treatment from which I have met with the greatest success, is the following :—Keep the bowels regular by small doses of Podophyllin and Leptandrin, or of the laxative powder heretofore named, composed of Rhubarb and Bicarbonate of Potassa; bathe the surface daily with a weak ley-water, to which some Alcohol has been added, and dry with considerable friction. To effect a diminution of the enlargement, the Iodine pill must be given daily, two or three a day, according to the severity of the disease, and the Compound Syrup of Stillingia may likewise be exhibited with great advantage. Palpitation of the heart may be overcome by the employment of the Tincture of Sheep Laurel, in doses of ten or twenty drops, repeated two or three times a day. Or, the following will be found very useful in many cases:—Take of Tincture of Musk, Essence of Cinnamon, Sulphuric Ether, and Tincture of Sheep Laurel, each, one fluidounce; mix. The dose is from ten to thirty drops, repeated three times a day. In several cases of excessive palpitation, with great nervous agitation, I have derived the most benefit from a pill composed of one or two grains of the Impissated Juice of Conium Maculatum.

The diet must be principally composed of tender animal food; and intoxicating or stimulating drinks must be used with great cautiousness, if used at all; all mental or bodily exertion must be avoided, as well as excitements or depressions of the mind. Cheerful company is of great service; and whatever will produce moderate laughter and pleasantness of feeling, should be encouraged. Sometimes, an electro-magnetic current passed through the heart, of moderate strength, will be found beneficial.

ENLARGED TONSILS.

THE Tonsils, or “Almonds of the Ear,” as they are popularly called, frequently become permanently swelled and indurated, as a consequence of quinsy, scarlet fever, &c., and are frequently owing to an irritation of these glands, in children of a scrofulous habit. Sometimes the swelling becomes so great as to render the voice hoarse, the breathing difficult, and interfering with swallowing. Deafness is sometimes produced by it, and, rarely, suffocation.

TREATMENT. The general health of the patient must be attended to by the proper hygienic and therapeutic means, and if the patient be of a scrofulous habit, adopt the measures named under scrofula. Not unfrequently, the enlargement can be removed by local applications, and especially when it is of recent formation. Among the agents which have been successfully used for this purpose, are:—

1. Take of Iodine one scruple, Ointment of Roses one ounce; mix. Apply a portion of this to the diseased tonsils every morning and evening, by means of a small brush, continuing its daily application for three or four months; if any inflammation is present, reduce it first.

2. Extract of Green Walnut shells six grains, water fifty grains; mix. Apply as above.

3. Take of Tannic Acid ten grains, common Salt twenty grains, Soft Extract of Bloodroot five grains, Ointment of Roses one drachm; mix. Apply as above.

4. The dried powder of Sesquicarbonate of Potassa, applied to the tonsils by means of a camel's hair pencil, repeating it every day or two as required.

In addition, the Compound Tar plaster must be applied externally over the region of the enlarged glands, and a discharge be maintained from it as long as the patient can bear; repeating its application after a time, if necessary. When these measures fail, the last resort is to excise the tonsils, an operation which should be performed only by a skilful surgeon.

AMAUROSIS.

AMAUROSIS, Gutta Serena, or Black Cataract, is a decay or loss of sight, owing to a partial or complete paralysis of the optic nerve, or a change in its structure from disease,—the eye presenting no apparent defect, except a slight dilation of the pupil, and remaining uninfluenced when exposed to the action of light. It may be owing to violent blows on the head or eyeball, apoplexy, long-continued use of the eye by improper light, exposure of the eyes to intense light, severe exercise, strong excitements of the mind, intoxication, masturbation, tumors in the skull or orbit, undue pressure, and other causes which may debilitate the nervous system, and especially the optic nerve. Amaurosis may occur at any period of life, and is exceedingly difficult of cure, especially among those advanced in years. When it occurs among the young, or is owing to the suppression of habitual evacuations, pregnancy, or is a sequel of certain fevers, the chances of cure are much greater.

SYMPTOMS. At first there are various perversions of sight, as a cloudiness or smokiness before the eyes; brilliant stars or bright spots dancing before the eyes; colored specks flitting across the sight; and sometimes there is headache, pain in the eyes, and a sensation as if dirt or dust were upon them. These symptoms may appear at various times, and either disappear altogether, or eventuate in blindness. Occasionally, the patient is not aware that any thing is the matter with his eyes, until made aware of it by a more or less complete loss of sight. The disease commonly attacks both eyes at the same time; rarely one eye alone is affected.

TREATMENT. The bowels must be kept regular; the surface of the body regularly bathed and rubbed; all close or continued exertion of the eyes must be prohibited; reading, writing, fine needle-work, exposure of the eye to bright light or brilliant colors, must be avoided; moderate exercise in the open air must be taken daily; the feet should be bathed in warm water every night; and the head dipped in cold or tepid water every morning, or a shower bath may be cautiously used. Cold water poured in a small stream, from a considerable height, upon the temples, repeating it two or three times a day, will frequently prove of much utility. A good, nutritious, easily digested diet, with stimulating condiments, will be found the best in most cases.

Internally, I have found some advantage from a pill composed of Iodine ten grains, Sulphate of Morphia two grains and a half, Strychnia one grain, Alcoholic Extract of Black Cohosh, a sufficient quantity to form the whole into a pill-mass; mix carefully and thoroughly together, and divide into twenty pills. The dose is one pill, repeated two or three times a day. It must be used with great circumspection on account of the Strychnia, which will be found to strongly affect many persons, even in a dose of the 1.40th of a grain; and in these cases, its quantity in the above pills must be diminished. In addition, mild currents of electro-magnetism may be passed through the eyes, continuing them for half an hour at a time, and repeating daily. Sometimes, much benefit will be found from a Compound Tar plas-

ter applied to the back of the neck, extending across from one joint to the other, and down the neck to the large joint, or seventh cervical vertebra, keeping up a discharge from it as long as the patient can endure it, and repeating the application from time to time. If the patient be weak or anemic, he must be supported by tonics, as Gentian, Quassia, Colombo, and some preparation of Iron.

DEAFNESS.

DEAFNESS may be owing to acute or chronic inflammation of the internal ear, to a relaxed condition of the tympanum or drum of the ear, to paralysis of the auditory nerve or the nerve of hearing, or, to a collection of wax in the ear. In the majority of cases it is difficult to correctly determine the cause of the deafness, and the treatment is consequently, empirical.

TREATMENT. When the deafness is owing to an accumulation of matter in the Eustachian tube, this must be removed by syringing the canal with air or water, and thus dislodging the obstruction, but no one should be allowed to perform this operation except a well-educated practitioner, otherwise permanent injury might follow. When the deafness is due to paralysis of the auditory nerve, a treatment similar to that named for Amaurosis may be pursued; passing the electro-magnetic current through the ear. When there is a relaxation of the tympanum, stimulants may be dropped into the ear, as, Burnt Alum ten grains, Sweet Oil of Almonds one fluidounce; triturate together. A few drops may be placed in the ear daily, which should also be injected two or three times a day with a decoction of equal parts of White Oak bark, Bethroot, and Rose leaves. Or, the following may be dropped in the ear:—Take of Oil of Cajeput one drachm, Oil of Bitter Almonds ten drops, Glycerin two fluidrachms, Olive Oil half a fluidounce; mix.

When there is an accumulation of wax, a mixture of Sassafras Oil ten drops, Glycerin one fluidrachm, Olive Oil half a fluidounce, may be dropped into the ear once or twice a day. Sometimes deafness is occasioned by a partial or entire loss of the tympanum, for which a small piece of cotton wool moistened with Glycerin may be introduced into the ear so as to come in contact with what portion of the drum remains; or, an artificial drum may be inserted. A deficiency of wax in the ear, may be remedied by a mixture of Glycerin one fluidrachm, Oil of Turpentine half a fluidrachm. Linseed Oil half a fluidounce. The proper hygienic measures should in all cases be carefully attended to.

When any foreign bodies get into the ear, they should be carefully removed, if possible, by syringing the ear with warm water; and if this will not dislodge them, a bent probe, small scoop, or small forceps may extract them. Insects in the ear may be killed by filling the ear with spirits, and then removed by injecting warm water into the ear; and all these operations about the ear, will be best performed by an educated physician, when one can be procured. These substances in the ear, have frequently caused great pain, deafness, palsy, and even convulsions, which have ceased on their removal. When the eggs of insects hatch in the ear, they often produce severe symptoms.

DISEASES OF THE SKIN.

SALT RHEUM, (PSORIASIS.)

THE name of Salt Rheum or Tetter, is applied to several diseases of the skin, among the most common of which is *Psoriasis*, characterized by irregular elevated patches of inflammation of the skin, covered by thin, irregular, and whitish scales. Generally there is great itching and pricking attending the disease, and but little or no constitutional disturbance. The hands are the parts more generally attacked, and the skin is often divided by deep fissures. When the disease attacks washerwomen, and bakers, grocers, and others who are exposed to the action of powdered substances, it presents large, dry, and hard scales on the back of the hands and fingers, with deep and painful fissures.

CAUSES. The causes of this disease are not well understood; some consider it owing to morbid humors in the system, but I think this is an error. Of late years microscopists have found parasitical plants present in cutaneous diseases, but whether these are a cause or merely an effect, remains to be determined. We find that persons who are exposed to cold and dampness, who use improper food, or are irregular in their meals, whose hands are exposed to the irritating action of flour, sugar, soap, wax, resin, &c., are more especially liable to the disease. A variety of other causes have also been named. The disease is not contagious.

TREATMENT. In the treatment of this disease, should there be any disease in connection with it, as of the liver, stomach, &c., or any scrofulous taint of the system, it will be proper to remove it by the appropriate remedies. In all cases it will be important to avoid the exciting causes of the malady, and to make use of all those hygienic measures calculated to give health, tone, and vigor to the system. Locally, one of the following preparations should be applied to the affected part:—

1. Take of Stramonium Ointment three parts, Hop Ointment one part, mix. Keep a portion of this constantly applied to the humor; and in washing the hands, instead of using soap, employ only warm water, or water with a small quantity of Oxalic Acid, or vinegar added.

2. A saturated solution of Oxalic Acid may be applied to the part two or three times a day, when there is not much irritation or inflammation.

3. Take of finely powdered Sulphate of Zinc four ounces, Liquid Styra^x one ounce, Lard one pound; mix, and boil slowly together for an hour, stirring all the time. This may be applied twice a day.

4. Use the Compound Ointment of Bayberry.

HERPES.

THIS is another affection of the skin, which has received the popular name of *Salt Rheum*. The disease is characterized by an eruption of vesicles grouped on a limited and inflamed part of the skin, presenting distinct spots with intervals of sound skin. The most common among this class of cutaneous diseases are, Herpes Zoster, or Shingles, and Herpes Circinnatus, or Ringworm.

Herpes Zoster, or Shingles is characterized by irregular patches of various sizes, and of a vivid, red color, which are covered with clustered vesicles, forming a zone or half-belt on the body, which usually commences at the middle line, in front of some part of the trunk of the body, and extends to the middle line behind, without ever passing this line. A vulgar opinion

prevails that if this belt encircles the whole body the case would terminate fatally. But it is not unfrequently the case that this entire encircling of the body occurs without any fatal result. These spots are occasionally preceded by a painful and burning sensation; the vesicles are distinct, transparent, and of a pearly appearance, attain their full development in three or four days, rarely exceeding the size of a large pea, and toward the fourth or fifth day having gradually become opaque and blackish, they shrivel and become wrinkled, leaving small, dark-brown scabs, which fall off on the tenth or twelfth day, leaving a redness of the skin which gradually disappears. Sometimes pus is found in the vesicles. In connection with this eruption, febrile symptoms will be present, as chills, heat of skin, quick pulse, a sensation of tension about the seat of the eruption, and in some cases irritation of the stomach and bowels. The disease most generally attacks young persons with fine and delicate skins, is more common in the summer and autumn, and frequently leaves large and painful ulcers, especially among weak and aged persons.

Herpes Circinnatus or Ringworm is characterized by small globular vesicles upon patches of inflamed skin, which assume the form of a circular ring, varying in size from that of a dime to that of a half-dollar or over. These vesicles are situated more especially near the edges of the ring, while in the center the skin becomes pale or of its natural color. There is a slight pricking or smarting sensation, with itching. The transparent vesicles become turbid and milky, and are succeeded by small, thin scabs, which fall off in eight or ten days, leaving a redness which slowly disappears. The disease may attack any part of the body, but more generally appears on the face and neck, the rings appearing successively, and the disease continuing for two or three weeks, or even longer. The causes of these diseases are not well understood, though they may, undoubtedly, be occasioned by exposure to cold, damp, fatigue, improper diet, and other depressing influences.

TREATMENT. Shingles generally disappear under a simple treatment, as regulating the bowels by some mild cathartic, administering the Compound Syrup of Yellow Dock, and applying to the eruption the Compound Ointment of Oxide of Zinc, Compound Ointment of Bayberry, or Ointment of Woodsoot. The leaves of Houseleek, bruised, and applied as a poultice, will be found very efficacious. Among weak, or aged persons, the Tincture of Muriate of Iron should be used, and the system supported by a generous, nourishing diet.

Ringworm may be cured by keeping the bowels regular, bathing the surface daily with a weak ley water, and applying to the eruption, the Compound Ointment of Bayberry, or a saturated solution of Oxalic Acid. In obstinate cases, the Compound Syrup of Yellow Dock may be given internally. The Tincture of Iodine has occasionally been used with effect.

MILK CRUST, OR MILK SCALL.

THIS disease has received several names, as *Crusta Lactea*, *Tinea Lactea*, *Porrigo Larvalis*, &c. It is common to young infants, being more commonly noticed upon the face, though it is frequently seen upon the extremities, and various parts of the body. Generally it appears first upon the forehead, and sometimes on the scalp; and then often extends half way over the face. It is characterized by an eruption of small superficial pustules of a yellowish-white color, more or less confluent, grouped on an inflamed surface of greater or less extent. The fluid within the pustules is at first whitish or transpa-

rent, which soon becomes of a dark color, and opaque, and when it is discharged externally, it is viscid and yellowish, forming thin, soft crusts of a yellowish-green color. The discharge continues; new crusts form, the first increase in thickness, and become thick, soft, and rounded in one place, while they are thin and in scales or plates at another. When the crusts fall off, they leave a red surface, highly inflamed, upon which fresh crusts are formed. Sometimes the discharge is very slight, forming a very thin, brown scale on the skin; again it may be so profuse that scabs do not form. Occasionally the forehead, cheeks, or chin, are covered with a large thick crust, like a mask, the nose and eyelids alone being exempt. When the disease is of certain extent, the itching and pain are often very violent; but some itching is always present, even in the mildest form.

When the disease is approaching a cure, the discharge lessens, the crusts form more slowly, become thinner and whiter, the surface on which they rest becomes less and less red, the crusts fall off, and do not form again. The skin gradually recovers its natural appearance, without any scar or disfiguration, unless the child has been permitted to abrade its face by violent scratching.

Milk Crust may remain for only a few weeks or for several months; it usually disappears soon after teething occurs, though if it begin after the first teeth have appeared, it may continue until second teething commences. The disease sometimes appears on adults. Its causes are not ascertained. Care must be taken not to allow the child to scratch its face, lest it thereby disfigure it. It is not a contagious affection.

TREATMENT. It will be proper in all instances to ascertain if the stomach and liver are performing their functions healthily; if not, it will be necessary to gently stimulate them by the administration of the Compound Syrup of Rhubarb and Potassa in doses to produce one mild evacuation daily. As an alterative and tonic the following may be given every four hours through the day:—Take of Tincture of Black Cohosh, Tincture of Shrubby Trefoil, each, two fluidounces; mix. The dose is from five to twenty drops, according to the child's age, and may be given in about a teaspoonful of sweetened water, adding from one to four drops of the Tincture of Muriate of Iron to each dose. An ointment may be applied to the parts affected, after gently bathing them with Castile soap suds, and drying, composed of the fresh leaves of Tricolored Violet (*Viola Tricolor*) simmered in cream, adding enough of the leaves to form an ointment when finished. To this ointment add Sweet Gum, in the proportion of three parts of the latter to eight parts of the former, combining them by a gentle heat. It may be used three or four times a day. I have occasionally derived benefit from an ointment composed of Mutton Tallow one ounce, Oxide of Zinc, one drachm, Tincture of Camphor two fluidrachms, Glycerin one fluidrachm; mix. Attention should be paid to the diet, its amount as well as the regularity of meals; exercise in the open air is an important measure. Not unfrequently, the disease will gradually pass away, after having changed the wet nurse, giving the infant other and healthy breast-milk.

SCALD-HEAD, OR DOW WORM.

SCALD-HEAD, or *Tinea Capitis*, is a term too generally applied to pustular diseases of the scalp, some of which differ essentially in their characters, and at the present day, are arranged into several species under various names. Thus the true scald-head is termed *Porrigo Favosa*, *Tinea Favosa*, &c. When

first observed, this consists of an eruption of minute pale yellow pustules around the cylinders of the hair, and dispersed in various situations on the scalp. Although generally isolated, yet it is not uncommon for them to be so crowded as to form something like a continuous punctated surface. These yellow pustules increase in size and number, are surrounded with an inflammatory blush, which does not rise above the level of the skin, and are accompanied during their development with an intense itching. Almost from the moment of their formation, they may be seen, either by the naked eye, or with the help of a magnifier, to be depressed or cupped on their surface; this is owing to the escape of the yellow fluid contained within the hair follicles, which desiccates into small cup-shaped crusts of a bright yellow color, porous and friable in texture, and having inverted borders. These crusts or scabs slowly increase in size, the cupping of their surface becomes more and more apparent, and they finally attain a diameter of several lines. They adhere very firmly to the skin, and can scarcely be removed in the dry state, without being followed by bleeding. When the pustules have been crowded, the scabs blend and become united on their edges, so as to form a continuous incrustation of very considerable extent, upon the surface of which the depressions, indicative of the nature of the original pustules, may still be distinguished. When exposed some time to the action of the air, the crusts break easily, and are interspersed with fissures. The disease may continue for months and even years, until the entire scalp becomes covered by one dense and uniform crust. Sometimes the whole scalp, even down to the bones of the head, are involved in the unhealthy action, and not unfrequently the lymphatic glands in the vicinity become enlarged. A rank and disgusting odor is exhaled from the disease, and without great care the head will become filled with parasitic pediculi. Occasionally ophthalmic affections will be produced. The hair may readily be pulled out by the roots, leaving white, smooth, shining bald spots, and when it grows again it will be of a permanent light or grey color.

The disease spreads rapidly among children who are much together, who sleep in the same bed, make use of the same comb, hairbrush, towel, &c., yet direct inoculation has failed to produce it. It principally attacks children between the ages of three and six, and appears to consist in the transmission of simple cells to the hair-follicles of a sound person, and which cells are capable of extending themselves by the ordinary process of multiplication. Improper or deficient diet, moist atmosphere, want of ventilation, confined and unhealthy localities, weak, or scrofulous condition of the system, favor an attack of the disease.

No other disease of the skin, except ringworm of the scalp, is characterized by minute yellow pustules, whose contents concrete almost as soon as they are visible, into cup-shaped, hard, and extremely dry, yellow scabs. In this disease the scabs adhere firmly, and can scarcely be removed in the dry state, without being followed by a little bleeding.

A parasitical fungus plant is found on the parts affected with this disease, called "*Achorion Schönleini*," which may be seen by the microscope.

TREATMENT. The hair must be cut as closely as possible, and a poultice of Elm bark applied, mixed with a solution of Subcarbonate of Soda, having first carefully washed the parts with Castile soap and water. The poultice may be placed on at bedtime, and remain during the night; the object is to lessen irritation and consequent inflammation, and to loosen the crusts. Upon removing the poultice, examine the head carefully and remove all loose incrustations, after which cleanse the head with Castile soap and water, dry it, and during the day apply two or three times to the scalp an ointment com-

posed of Lard six ounces, Sulphate of Zinc one ounce, Woodsoot one ounce, and Sulphur half an ounce. During the intervals between these dressings the head must be kept closely covered. After the crusts have all been removed, the poultice may be omitted. By pursuing this course daily the disease will soon be removed. Internally the Compound Syrup of Yellow Dock may be given, and the bowels kept regular; if the child be debilitated the Compound Powder of Quinia may be given. The whole surface of the body should be bathed daily with soap and water.

I have known several most inveterate cases cured by substituting for the ointment just named, another made by taking green rye, when it is about six or eight inches in height, and simmering it with fresh cream so as to form an ointment.

When the disease is not very extensive, the application of a Saturated Solution of Oxalic Acid will be found effectual; or, half a fluidrachm of Creosote may be added to two fluidounces of the above Saturated Solution, and used with advantage in some cases. A preparation has been used with benefit composed of an ointment of Sheep Laurel, (made by boiling the leaves, collected in autumn, in lard until they are crisp,) two pounds, Powdered root of American Hellebore, half a pound, Hard woodsoot, one pound; mix the articles thoroughly together, and anoint the scalp with it twice a day.

It has been highly recommended to apply Concentrated Acetic, or Pyroligneous Acid to the parts, by means of a fine sponge fastened to the end of a stick. The parts, as well as a short distance around them, are to be thoroughly imbued with the acid, for the space of three or four minutes, and the business is finished. Occasionally, however, four or five touchings will be necessary; to be applied, of course, after the removal of the poultice, and washing and drying the parts.

RINGWORM OF THE SCALP.

ANOTHER disease of the scalp to which the name "Scaldhead" has been applied, is Ringworm of the Scalp, variously called by authors *Porrigio Scutellata*, *Favus Confertus*, *Trichosis Furfuracea*, &c. This affection commences in the shape of one or more *circular* red patches attended with intense itching, upon which numerous very minute yellow pustular points, level with the skin, or but slightly elevated, make their appearance. These pustules are deeply embedded in the skin, and much crowded, especially in the circumference of the patches; they are circular, depressed, and almost universally traversed by a hair. The fluid within them dries up very soon after it is poured out, forming a minute cupped scab, which adheres by its edges to those in its immediate neighborhood, so that a continuous incrustation is thus produced of the form and dimensions of the original pustular patch. The crusts, however, in this disease, unlike those of the previous true scaldhead, do not usually continue long adherent, nor indeed does the primary patch long retain its first dimensions; for successive eruptions of pustules in its circumference speedily enlarges its diameter, and the crusts falling out of their cells in the central parts, the integument there becomes dry and subject to an habitual desquamation.

As in the previous disease, the hair, in this form, soon looks altered, becomes thin, and is then lost, so that the circular patches are all but bald, the few hairs that still sprout from their surface being crisp, woolly, and readily detached. When the disease has continued long, even this imperfect hair is no longer produced, and it may happen that the hair-bulbs are so deeply

affected as to be incapable, when the disease is cured, of resuming their functions, in which case, irremediable baldness is the consequence. The disease not only attacks the scalp, but parts thickly covered with down. Generally, several circular patches appear in succession on different parts of the scalp, probably from inoculation, performed by the fingers of the patient in scratching. These extend until they are one, two, or even more inches in diameter, and frequently meet by their corresponding edges, so that the entire surface of the scalp, and even parts of the forehead and cheeks, are occasionally covered by the disease. The desquamation is of a furfuraceous character, and the skin beneath the crusts is red and glossy, with small purulent points.

The disease is a very obstinate one, never yielding readily to any remedial treatment, so that between the want of perseverance on the part of practitioners and the anxiety of teachers to get rid of those children affected with it, lest they should contaminate others, the disease has been considered an opprobrium, not only to the physician, but likewise to the unfortunate child who is affected. It may continue an indefinite period of time, and is apt to leave a permanent baldness, or, if hair should grow again it will remain lighter than the rest. It spreads rapidly among children who wear each other's hats, or make use of the same comb, hair-brush, towel, bed, &c. Sometimes it occurs spontaneously among children, or from causes similar to the preceding variety. If left to itself it may give rise to the most disastrous consequences, even producing caries of the bones of the head. A parasitical fungus plant is found on the parts affected with this disease, called "*Trichophyton Tonsurans*," which may be seen by the microscope.

The clustering of the pustules, their circular arrangement, the cup-like and greyish-yellow appearance of the crusts, their easy removal, the baldness occasioned by the disease, and its contagiousness, will determine it from any other disease of the scalp.

TREATMENT. Poultice the head with the Elm and solution of Subcarbonate of Soda, as in the previous disease, wash it with Castile soap and warm water, and then all loose scabs and loose hairs must be gently removed by forceps, the head dried as thoroughly as possible, and the Compound Ointment of Bayberry applied to it, three times daily—or an ointment may be made of equal parts of Sweet Gum and Mutton Tallow. At night, again wash the head with Castile soap and warm water, re-apply the poultice, and so continue daily. The bowels must be kept regular, the surface of the body bathed daily, the child must not be allowed fatiguing or excessive exercise, and the food must be nourishing, digestible, and free from fats, acids, and stimulants. Internally, administer five drops of the Tincture of Muriate of Iron in water, four or five times a day to a child about five years of age, or in proportion. If the disease prove intractable in a scrofulous child, the Compound Syrup of Yellow Dock should be given. Sometimes a Saturated Solution of Oxalic Acid will be found an effectual application.

BARBER'S, OR JACKSON'S ITCH.

BARBER'S ITCH has received the names of *Mentagra*, and *Sycosis Menti*. It is a chronic inflammation of the skin, somewhat similar to *Acne*, appearing, however, more commonly on the chin, but which may attack every part of the face occupied by the beard. The disease, when severe, is usually preceded by many small pustular eruptions, either on the upper lip, the chin, or on the lower jaw; these are attended with a sense of tension, unpleasant

itching, and even pain. In a few days the pustules shrink, and are succeeded by thin scabs, which dry, and fall off in a few days more. When the eruptions become more abundant, so as to attract the attention of the patient, there will be numerous bright red points visible, and the feeling of tension, heat, and itching will be increased. In about three days these points will become distinctly pustular, the pustules being small, acuminate, distinct, in groups, occupying the chin, upper lip, or other parts of the face on which the beard grows, having their center traversed by a hair, and containing a yellowish-white fluid, which exudes when they are punctured. In about six or seven days the pustules burst, without any discharge of matter, though the indurated masses that surround them and give a deformed aspect to the countenance, are frequently observed to be moistened on their surface by an exudation of the pustular contents; brownish scabs eventually follow, which insensibly detach themselves, and the disease terminates from the tenth to the fifteenth day, if a new eruption does not take place. Sometimes only a few pustules are developed, disappear, and are followed by others for an indefinite period, the skin becomes rough, and small white crusts or scales are thrown off, under the center of which may be seen new pustules. Most commonly the disease continues, there is a succession of partial eruptions, and the skin becomes the seat of a chronic eruption over a larger or smaller surface, frequently being deeply inflamed, with heat, violent pain, and thick scabs.

This disease is confined principally to the male sex, being very rarely met with among females; it may continue for an indefinite period, and, occasionally, after a number of years it disappears spontaneously. It attacks all classes of society, but is more common to those whose faces are habitually exposed to strong heat, as smiths, cooks, bakers, founders, &c., and especially if they are intemperate. It may also arise from uncleanness, bad food, and the frequent employment of a towel used in common by many persons. It may be occasioned by the use of a dull razor, which irritates a susceptible skin; and if the eruption is once developed, the use of a razor will increase its severity. In most cases, it is not the razor which produces the disease, but uncleanness, intemperance and other causes which render the skin liable to the affection, and the attack of which is hastened by the application of the razor. A parasitical fungus plant is found on the parts affected with this disease, called "*Microsporon Mentagrophytes*," which may be seen by the microscope.

TREATMENT. The patient must avoid the exciting causes of the disease, as, exposure of the face to excessive heat, intemperance, bad food, &c. The razor must be laid aside until the disease is cured, and, instead of shaving, the beard should be carefully clipped short with a pair of flat, curved, and very sharp scissors. The bowels must be kept regular, and the diet should be of a light and cooling character. If there be much irritation or inflammation around the eruption, a warm poultice of Elm and Lobelia leaves should be applied, and after the irritation has been removed, one of the following applications should be used:—

1. A Saturated Solution of Oxalic Acid, with which the parts should be washed several times a day. I have met with more success from this solution than from any other remedy. In some cases it tends to increase irritation, but this may be avoided in such instances by diluting the solution, or, by employing the above-named poultice of Elm and Lobelia, every night, and applying the saturated solution through the day.

2. The preparation No. 3, of Sulphate of Zinc, Liquid Styraç, and Lard, mentioned under Salt Rheum, on page 491.

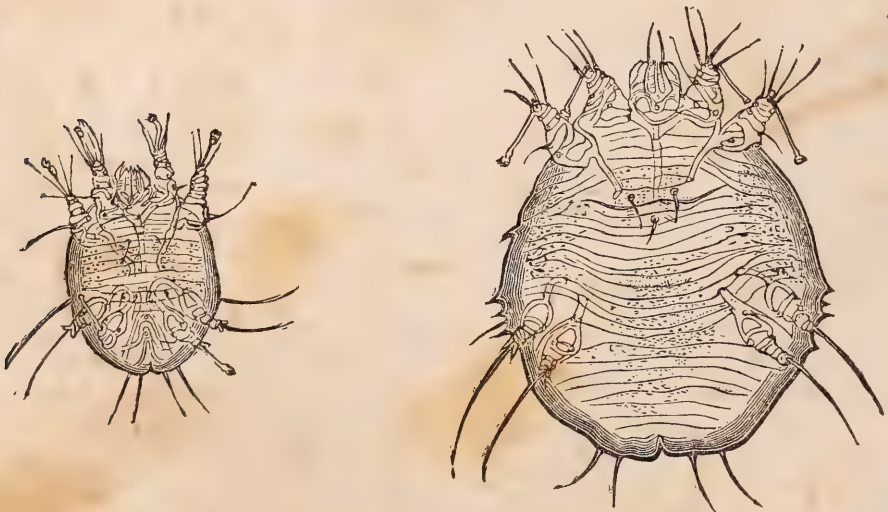
3. Take of Muriate of Ammonia two drachms, distilled water one fluid-ounce, Tincture of Conium Maculatum one fluidounce; mix. This should be applied as a wash to the parts several times a day, and will be found especially useful in those cases where the disease lasts for a long time, and where there are large tubercles and chronic indurations of the skin. In some cases half a fluidounce of the Compound Solution of Iodine added to the above mixture will increase its efficacy. Any loose hairs should always be at once removed, as they are apt to irritate the parts. Internal treatment is of little value, except to remove any complication which may exist.

ITCH, OR PSORA.

ITCH, or Scabies is a contagious affection of the skin, which is characterized by an eruption of distinct, slightly acuminate and conical vesicles, transparent in their summits, presenting a slight red tinge in young persons, and accompanied by excessive itching which is increased by warmth, heat of the bed, and the use of spirituous liquors or high-seasoned food. These vessels contain a viscid and serous fluid, which is discharged when they are ruptured by scratching or otherwise, and they are replaced by numerous small, red, inflamed spots. The disease may appear on all parts of the body except the face, which is always exempt; but the spaces between the fingers, the wrists, elbows, axilla, and abdomen are the parts more especially liable to be affected. All classes of society are liable to it, but certain professions are more obnoxious to it than others, as tailors, seamstresses, mattress-makers, dyers, &c. When the vesicles are very large and attended with much inflammation, they are apt to assume a pustular character, discharging pus.

In the young and healthy the disease will show itself in from two to six days after contact; in the debilitated it will require a longer time. In the adult from seven to ten days is required in the spring and summer, and from fifteen to twenty in winter; older persons require a still longer time before the vesicles will be manifested.

Fig. 39.



Male (smallest) and Female Itch Insect, magnified 100 diameters, or 10,000 times.

CAUSES. The cause of itch is a microscopic insect called the *Acarus Scabiei*, or *Sarcoptes Hominis*, see Fig. 39, which is transferred from one

person to another by actual contact, as, in sleeping together, shaking hands, &c., or, through the medium of clothing which has been worn by an infected individual. Persons who neglect personal cleanliness are especially liable to it, hence, it is very frequent among the lower classes, and when the disease is met with in respectable families, it will generally be found that laundresses, servants, or hired persons, have communicated it.

The itch insect varies from 1-77th of an inch to 1-147th in length, and from 1-94th to 1-303d of an inch in breadth. It "is a minute whitish creature, having no true head, but is provided anteriorly with proboscis-like mandibular organs furnished with four bristles. There are eight legs, four anterior are inserted into the thorax by the side of the proboscis, are jointed, and furnished with hairs and bristles, the last joint of each terminating in an adherent disk. The posterior legs without adherent disks, terminate in very long bristles. The animal burrows in the epidermis, and forms minute channels, at the end of which it may often be discovered; it does not inhabit the vesicles or pustules which constitute the eruption, and are simply excited by the irritative proceedings of the animal." With a bright light, and a good pair of eyes, a small spot or streak will be observed upon some part of the affected surface, at an early part of the disease; this is the original opening made by the insect on entering the skin, and from this spot will be traced a whitish streak or line of a few lines in length, which is the burrow of the acarus, and at its termination the insect will be found—there will be a slight elevation over it, beneath which the insect will be seen as a greyish speck; it can readily be removed by carefully raising the skin with the point of a needle, exposing it to view. It must be recollected that the primitive vesicles only, and which are produced by the entrance of the insect, will represent the above white streak; the insect is never found within a vesicle or pustule.

TREATMENT. Itch is a purely local disease, and does not appear to exert any influence upon the general constitution. When left to itself it may continue for years, or even during life. Many remedies have been recommended for it, among which the following are the most effectual:—

1. The Compound Ointment of Sulphur, which should be rubbed upon the affected parts once a day, continuing its use for a week or ten days, in order to destroy any eggs which may have been previously uninfluenced by it.

2. Oil of Turpentine applied externally, and taken internally in doses of five or six drops, two or three times a day, has proved efficacious.

3. Sulphuret of Potassium one drachm, Soft Soap two drachms, Water half a pint; mix, and dissolve. Wash daily with this; it does not smell bad, nor soil the linen. To be used for ten or twelve days.

4. Use as a wash a solution of Chloride of Lime.

5. Ointment of White or American Hellebore.

6. I have cured several cases of itch by simply bathing the surface twice a day with a mixture of Cologne Water one pint, Sulphuric Acid half a fluidounce.

7. Take Tincture of Camphor four fluidrachms, Vinegar one fluidounce, Cologne four fluidounces; mix, and use twice a day as a wash.

8. Take of Brown Soap one ounce, Table Salt half an ounce, Sulphur half an ounce, Chloride of Lime half an ounce, Alcohol one fluidrachm, Vinegar two fluidrachms; mix all together thoroughly. One-fourth of this is to be used at a time, rubbing it on every night and morning.

9. Take of Flowers of Sulphur sixteen parts, Sulphate of Zinc two parts, Powdered White Hellebore four parts, Soft Soap thirty-one parts, Lard sixty-two parts; mix. Use a little of this twice a day. In this and the preceding

preparations the use of either must always be preceded every morning and night, with a strong, soft soap water, employed as a wash to the whole surface of the body and limbs, which must then be dried.

The clothing of the patient, as well as the bedding, should be exposed to the vapor of Sulphur, in order to destroy any of the insects, that may have been deposited among them; and in cases where the disease has proved uncommonly obstinate, it would be desirable to destroy the infected clothing.

BLOTCHED FACE.

BLOTCHED FACE, or *Acne*, is a chronic pustular affection, characterized by a deep-seated and very indolent inflammation of the tissues immediately surrounding the sebaceous follicles, and of their excretory hair follicles; followed by small, hard, conical, and isolated pimples or pustules, of various degrees of redness. These are sometimes permanent for a considerable length of time, the tops gradually become pustular and burst, while the bases continue in an indolent state for some time before they disappear, leaving minute scars behind them. They appear on the face, especially on the forehead, temples, and chin, and sometimes on the neck, shoulders, upper part of the breast and back; but never descend to the extremities and lower parts of the body. *Acne* is divided into the varieties, *Acne Vulgaris* and *Acne Rosacea*.

Acne Vulgaris is characterized by small, red, and inflamed pimples, which rise gradually, assume a conoid shape, with pale, yellow heads; these eventually burst, a small quantity of sero-purulent fluid escapes which forms a flimsy scab which is detached in a few days, while the base of each pustule remains hard, and of a deep red color. Each pustule runs its course independently of the others. The tubercle or indurated base is a very long time in disappearing, and leaves a small, white scar. The suppurative period is not completed in these pimples until six or eight days have passed, when it bursts, as above. No pain or heat is produced, unless the pimple is developed near a filament of a sensitive nerve, when the pain may be severe.

Sometimes, in the center of each conical pimple, or in the majority of them, a small, round, blackish spot may be perceived, which is the external opening of a hair follicle, distended with a concrete sebaceous matter, and the black spot is the adhering dust of the atmosphere; these pimples suppurate, discharge the sebaceous matter, diminish in size, become purplish and livid, then whitish, and disappear very slowly. This form has received the name of *Acne Punctata*. When the pimple or tubercle is quite large, hard, deeply seated, and very indolent, having its suppurative stage prolonged two or three weeks before it matures, and frequently not suppurating at all, and afterward forming purplish or livid prominences, which require months before they disappear, and at times becoming permanent, it is called *Acne Indurata*. In this form the features are much disfigured by the deep red or livid tubercles, and after a cure there are apt to be left traces of its presence in the shape of small oblong scars. *Acne Vulgaris*, and its several forms more generally attacks young persons about the period of puberty, and who are apparently in good health; though it may be developed at any period between puberty and middle age. Those addicted to masturbation are very apt to be troubled with this affection, especially the variety *acne indurata*. Other causes, however, will give rise to the malady, as certain occupations in which it is necessary to keep the head low and near a furnace; irritations of the abdomen; excesses at the table; strong mental

affections; neglect of soap and water to the face; irritating lotions or cosmetics, &c.; frequently the causes are involved in much obscurity.

Acne Rosacea is especially characterized by the unusual redness and congestion which attend its conoidal pimples, by the prominence of the veins, the slowness of the progress and suppuration of the pimples, and the indolent character of the livid and indurated tubercles or knots which they leave behind. The most usual seat of *acne rosacea* is the nose, forming the red, pimpled, or *blotched nose*; the nose is frequently enlarged, the surrounding parts hypertrophied, and the veins become varicose and bluish, forming a contrast with the redness present. The redness and congestion is generally increased after a meal, and especially after the use of any stimulant. When the disease has lasted for some time the skin of the affected parts becomes rough and granulated; and even if the disease disappears, permanent scars, roughness, and inequalities are left behind.

Acne Rosacea is frequently associated with intemperance, but this is by no means a necessary cause, for it is often owing to chronic disease of the stomach, intestines, and liver, and any circumstance which will obstruct or lessen the circulation of the capillary vessels. In females it may be associated with amenorrhea. And in many cases its causes are obscure. It is more frequently met with after thirty-five years of age, seldom appearing among those younger unless they are naturally predisposed to it, or indulge too freely in liquors; and a perfect cure is seldom accomplished.

TREATMENT. In the treatment of both forms of *acne* the patient should live temperately and abstemiously, avoiding all stimulants, tea, coffee, and liquors, and using but very little animal food. The bowels should be kept regular, the surface of the body should be bathed with a weak alkaline solution daily, and every week or two a Spirit vapor-bath should be taken. Mental and physical fatigue, exposures to the sun, to hot rooms, to sudden changes of temperature are especially to be avoided. In females the condition of the menstrual function must be attended to. In all cases any diseased condition of other parts which may be present must be removed by appropriate treatment.

As local applications various agents have been used. In many cases a wash composed of Muriate of Ammonia two drachms, Tincture of Conium Maculatum one fluidounce, Distilled Water one fluidounce, will be found very efficacious, touching the parts with it several times a day; when there is little or no irritation present the Conium may be omitted, and some stimulant added as Tincture of Capsicum, or Myrrh, &c.

Frequently a mixture of two fluidrachms of Oil of Stillingia, one fluidrachm of Oil of Lobelia, and four fluidounces of Cologne, will be found a very excellent local application, especially in the more obstinate forms of the disease.

Equal parts of Cologne and a Saturated Solution of Oxalic Acid have proved beneficial, especially when the disease has been of recent standing. But whatever application is employed, it must be perseveringly used for some time. The Ioduret of Sulphur in the proportion of a scruple to an ounce of Elder Flower Ointment, or simple Cerate, and rubbed upon the elevations two or three times a day, has been highly recommended.

GRUBS IN THE SKIN.

COMEDONES is a disease in which the sebaceous secretion of the skin is concreted, and distends the hair follicles of the affected parts. It is popu-

larly known as *grubs*, or *worms in the skin*. It is more commonly observed on the face, especially the nose, presenting the appearance of round, black spots, which are more or less thickly clustered together, and which, when the skin, including one of these spots, is pressed between the fingers, discharges the concrete substance in the form of a minute white cylinder with one of its extremities blackened. When this cylinder is examined under the microscope it will most generally be found to contain one, two, or more insects, called *Acarus folliculorum*, or *Steatozoon folliculorum*, and which is also frequently met with in acne, especially acne punctata. (See Fig. 9.)

This insect is from 1-75th to 1-125th of an inch long, and about 1-500th of an inch broad; it has an elongated figure, a long thorax with four pairs of short, conical legs, and an abdomen three times as long as the thorax, which gradually tapers to an obtusely pointed extremity. The head is continuous directly with the thorax, and has two large palpi, and a proboscis situated between them. The abdomen is marked by a number of transverse lines or grooves, and contains round, oval, and quadrate transparent places among granules; the legs are terminated each by three claws, one of which is longer than the other. The insect is slow in its movements, but retains its vitality for some time after being removed from the skin.

Comedones is generally met with among persons in whom the circulation of the capillary vessels is less active than natural, especially among those laboring under diseases of the various organs of the body, or, who exhaust the vital energies by overtasking the brain and nervous system; it is a common associate of acne.

TREATMENT. The parts should be washed daily with soap and water, and in drying should be briskly rubbed with a rough towel until a glowing sensation is felt; after which the parts may be bathed several times a day with the mixture of Muriate of Ammonia, Tincture of Conium, and water, named as a local application in acne, page 501, or a lotion of equal parts of a Saturated Solution of Oxalic Acid and Cologne may be used. The surface should be kept healthy by daily ablutions, the regularity of the bowels preserved, and the system sustained by good nutritious, easily digested food, avoiding all liquors. In obstinate cases, twenty drops of the Tincture of Muriate of Iron in a wineglass of water may be taken, and repeated three times a day. Any disease connected with the cutaneous difficulty must be removed by the appropriate treatment.

FRECKLES.

LENTIGO, or Freckles, are small, rounded, brownish-yellow, or greenish-yellow spots that appear upon the face, throat, bosom, hands, &c., of individuals, especially those of light complexion and hair, and those who have red hair. They differ from ephelis or sunburn, by not disappearing in the winter. The cause of these spots is not known, though they are popularly supposed to be owing to an exposure to the sun's rays; but they are frequently met with among newly born infants, and persons who have never been exposed to the light of the sun.

TREATMENT. It is not always that freckles can be cured by any treatment, but occasionally they have been removed by local applications, as a weak solution of Citric Acid in an infusion of Roses; a liniment of Lime-water and Oil, to which a small quantity of Liquor Ammonia has been added; a mixture of three parts of Cologne, and one of Oxalic Acid in solution; a weak solution of Lactic Acid, &c. In several instances, the follow-

ing has proved useful:—Take of Lobelia seed half an ounce, Beef Gall half an ounce, Gum Guaiacum one drachm, Bicarbonate of Potassa one drachm, Oil of Turpentine one fluidrachm, Spirits half a pint. Let the articles stand for ten or twelve days in a glass vessel, frequently shaking. Use as a wash two or three times a day.

BOIL.

BOIL, or Furunculus, is a well-known hard, conical shaped swelling, the size of a pea or larger, accompanied with a degree of pain, and which may be situated on almost any part of the body. The swelling rapidly increases in size, becomes of a florid red color, its base penetrating deeply, and after five or six days the summit of the enlarged boil becomes pointed and yellowish-white, bursts, and discharges a small quantity of a bloody pus. In the opening of the boil thus formed, will be perceived a sloughy piece of cellular membrane, commonly termed the *core* of the boil, which becomes loosened in ten to fifteen days, and is expelled naturally or artificially. The pain now ceases, the swelling rapidly disappears, and in a few days the part heals, leaving a permanent scar, and a transient, dusky redness. Frequently, instead of one boil only appearing, there will be several or more, and which will sometimes continue to form in succession for months and even years. They are more common to the young, and are generally connected with some derangement of the liver and stomach, and, probably, an unhealthy condition of the blood.

TREATMENT. If the swelling be touched freely with Nitrate of Silver at an early period, or with a saturated solution of Oxalic Acid, or with Oil of Turpentine, it may frequently be checked; the application of an Ice poultice will often retard its further advance. When it is in a state of inflammation and pain, it may be poulticed with a Flaxseed, Elm bark, or bread and milk poultice, in order to hasten suppuration. If there be much pain, Hops, or Lobelia leaves in poultice, may be applied. The bowels should be kept regular, diet regulated, and patient remain as quiet as possible. After the tumor bursts and discharges, but little or no treatment is required, except it assume an indolent form, when the sore left may be touched with the Sesquicarbonate of Potassa, and dressed with the Red Oxide of Lead plaster. When the tendency to boils continues for months, the patient should use a generous diet, moderate exercise, and the following:—Take of Ground Centaury, (*Polygala Nuttallii*,) half an ounce, Burdock seed one ounce, water one pint; mix, boil, and use in doses of a table-spoonful three or four times a day. In addition to this, the following may be used:—Take of Sulphate of Quinia two grains, Sulphate of Iron eight grains, Leptandrin four grains; mix, divide into four powders, of which one is a dose to be repeated three times a day.

A STYE on the eyelid, or Hordeolum, is a kind of boil seldom requiring treatment; when it returns frequently, and becomes painful and troublesome, this may be obviated by taking the decoction of Ground Centaury and Burdock seed, above named.

WARTS.

WARTS, or Verruca, are too well known to need a description; the cause of their appearance is not understood. I have met with great success in

destroying warts by touching them daily with Nitric Acid, Nitro-muriatic Acid, or Concentrated Acetic Acid, removing the disorganized parts as fast as they are formed. A saturated solution of Muriate of Ammonia in Vinegar, applied several times a day, for three or four consecutive months, has removed them. The Juice of Milkweed, of Celandine, and of Marigold Flowers, are popular remedies in the country. The Bichromate of Potassa, in a saturated solution, has also been successfully used; it should be applied carefully, and allowed to touch no other part but the wart. Probably Chromic Acid might answer. A mixture of equal parts of Nitre and Unslacked Lime added to sufficient Vinegar to form a thick paste, has proved an effectual application. Indeed, there is no end to the remedies.

Syphilitic warty excrescences occasioned by the matter of gonorrhea or chancre lodging on parts, are often numerous and troublesome; they may be removed by the application of powdered Savine leaves, by Muriate of Ammonia dissolved in Vinegar, by Nitrate of Silver, by ligature when the base is broad, or by clipping them off with the scissors when small, and touching the cut surface with Caustic. Or, moisten the excrescence with a mixture of equal parts of Wine and water, then cover with a powder composed of two parts of Alum and one of Savine leaves, and place some lint on to preserve the powder in its situation; repeat this dressing twice a day.

CORNS.

CORNS, Callosities, or Clavus, need no description; they are produced by pressure or friction of some hard substance on certain parts, as from boots, shoes, pressure of the toes on each other, pressure of scissors, or other tools on the fingers or hands, and on the knees by much kneeling. There are three kinds of corns, viz: the *laminated corn*, in which the hardened epidermis exists in layers; the *fibrous corn*, in which fibres appear to pass through it, giving rise to the idea that the corn has a core and root, but which are really elongated papillæ; and the *soft corn*, which is very painful and troublesome, and sometimes occasions ulcers.

Corns are not difficult of removal if persons suffering from them would adopt the proper measures, but these are seldom attended to, and consequently palliative means alone are employed, as cutting or filing the corn, after having well soaked and softened it in an alkaline solution. After this is done, however, a permanent cure may be effected by keeping the corn covered with a plaster of Soap, with lint moistened with Tincture of Camphor, or with Red Oxide of Lead plaster; preserving the corn from pressure by means of a plaster of thick leather, softened with oil, and having an opening to fit the corn, and wearing it constantly during the day. And as fast as possible any indurated skin must be removed. Soft corns between the toes, may be cured by applying lint or cotton wool, moistened with Tincture of Camphor, so as to keep the toes apart, and the dressing should be renewed three times a day. The same tincture frequently applied, will remove the callosities, or soft corns, formed on the hands from the pressure of scissors, &c., always taking care to remove from time to time any loosened hard skin which may be met with.

Various mixtures are used by corn-doctors for the cure of corns, as the following:—1. Make a thick paste with White Lead and Linseed Oil, add enough powdered Bloodroot to color it; spread this on a piece of bladder and apply, renewing it in three or four days. 2. Take Nitric Acid, Muriatic Acid, of each, half a fluidounce, Red Sanders, Opium, Muriate of Ammo-

nia, of each, one drachm; mix. Make a very light incision around the corn, rub for a few minutes with the stopper of the vial in which the mixture is made, having first shaken it well that the stopper may be moistened with it, and the corn will ultimately be loosened and may be removed. 3. Take Tartaric Acid, Muriatic Acid, rain water, of each, one fluidounce; mix, and add a lump of Mutton Tallow the size of a small marble. By means of a small stick, apply this to the corn three or four several times, and then carefully remove it with a penknife. When corns are once removed, they are very apt to return, unless care be taken to wear proper sized soft shoes, and not walk too much, especially during warm weather.

CHILBLAINS.

CHILBLAINS, or Pernio, is a painful, inflammatory swelling, of a red, purple, or blueish color, which affects the fingers, toes, heels, and other parts of the extremities, in consequence of their exposure to severe cold. The pain is not constant but appears at certain times, and is rather of a shooting and pungent character, and an annoying itching is present; these symptoms are more commonly aggravated in cold and damp seasons. The skin may remain entire, it may break and discharge a thin fluid, or it may, when the cold has been intense or long-continued, slough around the affected parts and leave a foul, irregular, and painful ulcer. Children and old persons are more apt to be affected with chilblains, from exposure to cold, than those of middle age; more especially those of a scrofulous taint. Those who are subject to this species of "frost-bite," should be careful, in cold and damp weather, to keep the feet well warmed and dry, and when cold to warm them by friction or exercise, and not by placing them near a fire or warm stove.

TREATMENT. In chilblain where there is no ulceration, it is a very difficult matter to effect a permanent cure, although great relief may be afforded. Various stimulating applications have been advised, and among them the following:—1. Soak the parts in ley-water as hot and as strong as can be borne, then dry, and rub on the following, heating it in by a brisk fire:—Take of Neats' foot oil, Oil of Sweet Almonds, each, twelve ounces, Yellow Beeswax four ounces, melt together by a gentle heat, and when nearly cold add Oil of Lavender three fluidounces, strong Aqua Ammonia two fluidounces, Camphor one ounce, Tincture of Capsicum two fluidounces; triturate all together in a mortar. 2. Take of Muriate of Ammonia two parts, water four parts, Tincture of Capsicum eight parts; mix, and rub on the affected parts. 3. Use the Compound Tincture of Camphor. 4. Take of Rectified Oil of Turpentine one fluidrachm, Sulphuric Acid fifteen drops, Olive Oil two and a half fluidrachms; mix. Rub it on the chilblains two or three times a day.

If the skin is broken, or if ulceration is present, a poultice of Elm bark and Yeast may be used for a few days, after which apply one of the following mixtures:—Take of Opodeldoc twelve fluidounces, strong Aqua Ammonia, Tincture of Camphor, Tincture of Cantharides, each, four fluidounces; mix. 2. Take of Balsam Peru half an ounce, Alcohol four fluidounces, dissolve, and add Muriatic Acid one drachm, Tincture of Benzoin half an ounce; mix, and keep the mixture in a dark bottle. Rub on the affected part several times a day. 3. In some cases, treat the same as an indolent ulcer.

FROSTBITE, OR GELATUS.

WHEN an intense degree of cold is experienced, giving rise to loss of vitality, and mortification of the parts attacked, it is termed "frost-bite." The symptoms of a frost-bitten part, are a deep bluish-red color of the skin, from the diminution of the supply of arterial blood, and the retardation of the circulation of the venous blood, contraction of the blood-vessels, followed by a livid tallowy paleness of the part, with loss of sensation and motion. If the whole body be affected, a disposition to sleep comes on which terminates in death.

In the *treatment* of frost-bite, whether it be confined to a limb, or affect the whole body, any violent reaction must be restrained, and the natural heat of the body must be restored gradually. If the person who is frozen be brought into a warm room, or be placed in a warm bath, it will certainly kill him, and the same will happen to any part thus improperly exposed. The patient must be kept in a cool place, the part should be gently rubbed with cold water or snow, continuing the friction until the circulation is restored as well as the natural heat of the parts; the cold water should be used for some time after the return of the circulation. If mortification has taken place, the dead parts must be allowed to separate, and be treated as named under the head of Mortification.

A frozen person should be gently rubbed all over with snow or cold water, or he may be placed in a cold water bath. As soon as the body is somewhat thawed, there will commonly be a sort of icy crust around it; then remove the patient from the bath, rub the body and limbs with cold water mixed with brandy or whisky, and as soon as the limbs become supple, dry the surface carefully, and put the patient into a cold bed in a cold room. Scents and agents which cause sneezing are to be held to his nose; if natural breathing does not come on, carefully blow air into his lungs; inject warm water mixed with Camphorated Vinegar into the bowels; tickle the throat with a feather; and dash cold water upon the pit of the stomach. Gradually introduce him into rather warmer air, and cause mild perspiration by Balm, Catnip, or Pennyroyal teas, warm Wine, &c.

DISEASES OF WOMEN.

UNDER this classification are included certain affections peculiar to females only, and which have not been treated upon in other parts of the work. Nymphomania, Childbed Fever, Inflammation of the Womb, Miliary Fever, Hysteria, Cramps during Pregnancy, Vomiting during Pregnancy, &c., &c., will be found in other parts of the work, for which see Index.

Beside the peculiarity of her structure, the female differs from the male in presenting certain functions altogether absent in the latter, as the functions of menstruation, childbearing, and suckling; and these three functions, although materially differing from each other, are entirely dependent for their normal continuance the one upon the other.

The establishment of the function of menstruation varies in different climates, appearing as early as at the eleventh or twelfth year in warm latitudes, and a few years later in temperate climes. In this climate it usually appears at the fourteenth or fifteenth year, though it may appear at an earlier or later period. When it appears as early as the twelfth or thirteenth year, it is termed *precocious* menstruation, and is a phenomena much

to be regretted, as it indicates a premature or too rapid development of certain parts, while others, fully as important, are delayed and incomplete. Precocious menstruation is apt to be followed by early death, more especially if marriage, followed by pregnancy, should unfortunately take place as a consequence of such indications of maturity. When menstruation is delayed until the seventeenth or eighteenth year, it is called *tardy*; and is an indication of some disease or debility, which may eventually prove fatal to the female.

In healthy females the menstrual discharge returns at regular periods of twenty-eight days, amounts on an average to from four to eight ounces, and continues each time from three to seven days, according to the constitution of the female. With the exception of disease or pregnancy, it continues thus with great regularity, until about the age of forty or fifty, when it ceases permanently, and this cessation is called the "turn of life." Occasionally, exceptions are met with in the above matters. The appearance of the menstrual discharge is usually indicative of the maturity of the female, and her capability of becoming a mother; while its cessation manifests the loss of such capability.

The discharge often appears without any premonitory symptoms; most generally, however, it is preceded by a sense of heat and weight in the lower part of the body, colicky pains, headache, full pulse, &c. At first it is rather small in quantity, and of a muco-serolent character, but soon becomes bloody and in proper amount; in a few days, it lessens, becomes paler, and gradually ceases, to be again renewed at the expiration of another month. There has been a great deal of speculation among physiologists relative to this function; at the present day, the general opinion is, that it is a symptom of the maturity and discharge of ova from the female ovaries.

Mothers, and female guardians, instead of keeping a strict silence upon matters connected with menstruation, should, by all means, instruct and explain these subjects to their daughters and wards, as soon as they are approaching toward this period; informing them how to manage themselves, so as to keep free from the difficulties arising from exposures to cold, excessive heat, and other causes. It is much to be regretted that a false delicacy prevents mothers from conversing with their daughters upon these important topics of health and life; were it a customary duty for parents, much suffering and misery would be spared the sex annually.

The menstrual phenomenon is subject to several derangements, which I will now proceed to consider.

ABSENT, OR INTERRUPTED MENSTRUATION.

THE term Amenorrhea is applied to that condition of the menstrual function in which its flow is interrupted or suspended; and it may occur under two forms, one, in which the discharge has never appeared, termed *emansio mensium*, or absent menstruation,—and the other, in which, after its appearance, it has become obstructed, termed *suppressio mensium*, or suppressed menstruation. Each of these will require a separate consideration.

SYMPTOMS. In the first form, or *absent menstruation*, at the time when the menstrual effort comes on, there are usually shiverings, pain in the back and loins, aching along the thighs, weight at the lower part of the body, general lassitude and uneasiness. Sometimes severe headache will be present, with a fulness and throbbing in the head, intolerance of light and

sound, pale countenance, irregular action of the stomach and bowels debility, difficult breathing, and hysteria; these symptoms will vary according to the constitution of the patient, and the particular causes which are present.

CAUSES. This form of amenorrhea may be owing to an absence of the ovaries, or of the womb, or closure of the vagina, and other defective formations, in which case, but little relief can be obtained, except in those cases where the aid of surgery may remove, or properly alter the malformation. When there is no deficient formation, the derangement of the function may be owing to an anemic or chlorotic condition of the system, in which case, other symptoms will be present, which are peculiar to chlorosis, and the case must be treated for this last disease, before any attempt be made to restore the menstrual discharge. In the absence of the above causes, the disease will usually be found owing to the habits of the females, being more common among those who enervate the general system by a sedentary and indolent life, gross and luxurious diet, hot rooms, soft beds, too much sleep, &c.

TREATMENT. In all cases of absent menstruation, where the general health is undisturbed, no treatment whatever should be employed; it is only when the health suffers in these instances, that the aid of medicine is required. Many females have been injured for life, by the injudicious treatment of friends or physicians,—interfering with medicines to force the menstrual flow, when their health was excellent, and no medicinal aid was needed.

When the health of the female is manifestly deteriorated, in connection with the menstrual absence, the physician should, if possible, determine whether this be owing to malformation, defect of organs, or to the presence of other diseases; and in the latter instance, the maladies, whatever they may be, must be removed previous to any attempts to restore the menstrual discharge. If, however, none of the above difficulties are present, and there is likewise an absence of chlorosis, the case is one of simple amenorrhea, and must be treated as such.

The treatment will vary according to the condition of the patient; if she be of a full habit, it will be necessary to keep the bowels regular, by mild laxatives, giving an occasional active cathartic, say every week or two, of the Compound Powder of Leptandrin; the whole surface of the body should be bathed every day or two with a weak alkaline solution, drying with considerable friction. About the time of the menstrual effort, warm infusions of herbs which exert an influence on this function should be administered, as of Tansy, Black Cohosh, Blue Cohosh, Life root, &c., and the Spirit vapor bath may be given, and repeated for a few nights at this period. One very important measure in the management of these cases, is exercise; the female should be made to take plenty of daily exercise, in the open air.

If the patient be nervous, weakly, or delicate, the bowels should be kept regular by the use of mild laxatives, as, the Powder of Rhubarb and Bicarbonate of Potassa, named under Dyspepsia, on page 399, and should take some tonic preparation, as the Compound Wine of Comfrey, or Compound Syrup of Partridge-berry. Her diet should be composed of good, nourishing, and easily digested food, avoiding fats and acids, and she should be made to take moderate exercise daily, in the open air.

Should there be much pain or suffering at the menstrual period, a warm fomentation over the bowels, of Hops and Tansy, in Spirits, will in most cases afford relief; but should this fail, Anodynes may be given, as the

Compound Powder of Ipecacuanha and Opium, or, Tincture of Gelsemium, Tincture of Belladonna, &c., giving these in small doses, and repeating them at short intervals, until relief is obtained.

It will sometimes happen, however, that although the general health will be improved by the above means, the catamenial discharge will not make its appearance, in which case, it will become necessary to make use of those means which are stated to exert a specific influence upon the womb. Among these are the following:—

1. The Iodine pill. This will be found more especially beneficial in those of a strumous or scrofulous diathesis.

2. Take of Caulophyllin, Aletridin, each, ten grains, Extract of Belladonna one grain; mix together, and divide into ten pills, of which one is the dose, to be repeated three times a day.

3. The Compound Tincture of Blue Cohosh.

4. Take of Podophyllin one grain, Carbonate of Iron eight grains, Cimicifugin four grains, White Turpentine a sufficient quantity to form the whole into a pill-mass; mix, divide into four pills, and administer one pill every four hours.

These remedies are to be used daily, during the intervals between the menstrual efforts, and their influence will be materially aided, if in addition, a current of electro-magnetism be passed through the womb and ovaries, two or three times daily; continuing its application each time for about half an hour.

Occasionally instances will be met with, in which the monthly discharge instead of being red is of a white color, and which will prove a source of much anxiety to the patient. This is "*vicarious uterine leucorrhea*," and is owing to an unhealthy condition of the blood. The patient in these cases is usually weak, not capable of much exertion, and frequently, there will be a leucorrhœal discharge in the intervals between the catamenial periods. Care must be taken not to treat these cases as simple amenorrhea, nor attempt to use means for the purpose of forcing the red discharge to appear. The fact that the womb is acting regularly is determined by the periodical appearance of the white discharge, and all that the physician must do, is to restore the blood to a healthy condition, and thus gradually bring about the red or natural appearance of the secretion.

This may be accomplished by a nourishing and digestible diet, with plenty of exercise in the open air, and keeping the bowels regular. If the patient is scrofulous, the Compound Syrup of Yellow Dock must be given, in connection with the following pills:—Take of Sulphate of Iron, Cimicifugin, each, forty grains, Podophyllin ten grains, Extract of Gentian a sufficient quantity to form the whole into a pill-mass; mix, and divide into forty pills, of which one may be given every four hours. Just before the return of the catamenial period, it will be proper to bathe the feet every evening in warm water. When no scrofulous taint is present, the Compound Wine of Comfrey may be used instead of the above-mentioned syrup.

SUPPRESSED MENSTRUATION.

THIS is the second form of amenorrhea, and is applied to those cases in which the menstruation has previously appeared; it may occur at any time from the commencement to the cessation of the menses. When it occurs suddenly, it is called *acute amenorrhea*, and when gradually, *chronic amenorrhea*.

SYMPTOMS. In acute amenorrhea, there is generally more or less fever, headache, thirst, nausea, quick pulse, &c.; or, the brain, lungs, bowels, womb, &c., may be attacked with inflammation. The symptoms, however, will be found to vary very much. The patient will be subject to attacks of fainting, hysterics, loss of voice, amaurosis, and cutaneous diseases, and sometimes severe neuralgic pains will attack the womb. Paralysis and apoplexy have followed a sudden suppression of the menses. This is the most serious form of amenorrhea.

CAUSES. Acute amenorrhea is usually the result of a cold contracted during the catamenial discharge, as by getting the feet wet, lying in damp beds, or other exposures. It may also be occasioned by violent mental or physical disturbance during the menstrual period, from fever or other severe diseases setting in at that period, from sexual intercourse during the monthly flow, &c.

TREATMENT. The discharge should be recalled as soon as possible, either by a warm hip bath, or a Spirit vapor bath. If the bowels are constipated an active cathartic must be administered, as the Compound Powder of Jalap, or Compound Powder of Leptandrin; and to relieve any pain in the region of the womb, a warm fomentation may be placed over the abdomen, of Hops and Tansy in spirits; and the Compound Powder of Ipecacuanha and Opium, or, the Compound Tincture of Virginia Snakeroot, or the Tincture of Gelseminum, may be given in small doses, and repeated at short intervals. Warm infusions of Pennyroyal, Liferoot, Tansy, Featherfew, Motherwort, &c., may be drank freely. If the discharge be restored, great care should be taken to observe that it appears properly at the next menstrual period; and in the interval the patient may use the Compound Syrup of Partridgeberry.

If the catamenial discharge is not properly restored, the difficulty may terminate in *Chronic Amenorrhea*. This, however, may be caused by other circumstances, as diseases of the womb, ovaries, or other organs, or from a gradual loss of health.

SYMPTOMS. Chronic amenorrhea, when not the result of an acute attack, may come on gradually, the discharge being uncertain and irregular in its appearance, but slowly diminishing until it ceases entirely; or, there may be a white fluid, alternating with the red. There will usually be pains in the head, back, and side, irregular and deficient appetite, a gradual failure of the vital powers, ending in a confirmed deterioration of health, most favorable to an attack of some of the fatal organic diseases peculiar to the climate in which the patient resides.

TREATMENT. We must be careful to ascertain that the case is one of chronic amenorrhea, and not of pregnancy, before attempting treatment. And, again, should the suppression occur at that period when the "turn of life" is expected, great care should be taken not to use too active medication, but only to palliate severe symptoms, else, much mischief might be done.

Whenever we can ascertain the cause of chronic suppression of the menses, as, for instance, the disease present which occasions it, we must pursue measures calculated to overcome this, whatever it may be, and it will generally be found, that on the patients' recovery, the menses will return. Under other circumstances the better course will be a tonic and alterative treatment, giving the Compound Syrup of Stillingia with Iodide of Potassium, three times a day, in conjunction with a pill composed of equal parts of Aletridin, Caulophyllin, and Sulphate of Iron; make three grain pills, and administer one every four hours. In some cases considerable benefit

will be derived from the use of the Compound Tincture of Tamarac, taken in connection with the above pills, or with those named on page 509, No. 4, in the treatment of Absent Menstruation.

The bowels should be kept regular, the surface of the body bathed every day or two with a weak alkaline solution, rendered slightly stimulating by the addition of alcohol, and once in every week, a Spirit vapor bath must be taken. Exercise in the open air, proportioned to the strength of the patient, is a very important measure, and must by no means be neglected; indeed females, as a general rule, do not have sufficient exercise, and a great part of their difficulties will be found owing to those sedentary and unnatural customs which society unjustly imposes upon them. They are home, home, all the time, or should they venture abroad daily for exercise, that they may benefit their own health and thereby secure a robust and healthy offspring, they are insulted and discouraged on almost every side, by that epithet so disgraceful to its utterers, "street-yarn spinners." Nutritious and digestible food must be used, carefully avoiding every article which disagrees with the system. In obstinate cases currents of electro-magnetism may be passed through the uterus daily; and with some, the Compound Tar plaster placed over the sacrum, or low down on the spinal column, and kept discharging for some time, will be found an excellent auxiliary measure.

PAINFUL OR DIFFICULT MENSTRUATION.

DYSMENORRHEA is the term applied to menstruation which is attended with more or less distressing pain. It is sometimes very unyielding in its nature, continuing until the "turn of life." The pain may be moderate, or it may be very violent, rendering the patient a permanent invalid, from its repeated shocks to the constitution. It may occur shortly before the discharge appears, or simultaneously with it, and, sometimes does not come on, until near the termination of the discharge. The character of the pain, and the accompanying symptoms vary according to the constitution of the individual; and from this circumstance, the disease has been divided into three species, viz: the neuralgic, the inflammatory, and the mechanical.

SYMPTOMS. The *neuralgic* variety of dysmenorrhea is generally met with among delicate or nervous females. The menstrual flow is either preceded or succeeded by a headache, which sometimes alternates with pain low down in the back, and extending to the lower part of the abdomen and down the thighs. The pain may be constant, or may occur in paroxysms, with intervals of ease, and it is frequently so violent as to be almost insupportable. It usually lasts from six to twelve hours, when the appearance of the flow relieves it in a great measure. The discharge may be diminished, paler than usual, and mixed with clots; and sometimes there is a membrane passed, looking somewhat like the thin skin situated between the white and shell of an egg. Ordinarily the general health suffers but little, though sometimes it becomes permanently impaired.

In the *inflammatory* variety there is a severe pain across the back, aching of the limbs, weariness, intolerance of light and sound, flushed face, hot skin, and a full, bounding and quick pulse, often over 100 beats in a minute. The fever may run so high that temporary delirium will supervene. There will also be considerable swelling and congestion of the cervix, and great heat about the parts. The menstrual flow is usually more abundant than in the neuralgic variety, and when it occurs, all the severe symptoms are relieved. The thin membrane found in the preceding variety may also

be met with in this. Inflammatory Dysmenorrhea may be accompanied with falling of the womb, uterine leucorrhea, or ulceration of the neck of the womb, the last of which can only be detected by the speculum, and each of which must be removed by appropriate treatment before a permanent cure can be made. During the intervals between menstruation, the patient's general health is but seldom affected.

The symptoms of *mechanical* dysmenorrhea, are somewhat similar to the preceding, varying according to the causes occasioning it, and the attending circumstances. In all the varieties of dysmenorrhea, sterility is the general rule, pregnancy the exception.

CAUSES. *Neuralgic* dysmenorrhea may be caused by cold taken during menstruation, or subsequent to a miscarriage, or delivery; or, it may follow some sudden or severe shock, or mental emotion, occurring at the menstrual term. It may be mistaken for an abortion, but may be distinguished from it by a knowledge of its previous monthly character, and by the amount of blood being less than in an abortion. *Inflammatory* dysmenorrhea is more common to plethoric females, and those of sanguine temperament, and may be caused by the same circumstances which will give rise to the preceding form. *Mechanical* dysmenorrhea is owing to a narrowing or constriction of the canal of the neck of the womb, which may be the result of inflammation, or a long-continued falling of the womb and bending of the uterine neck.

TREATMENT. The indications of treatment are first, to lessen the pain during an attack; second to prevent its subsequent return by proper treatment during the menstrual intervals.

To relieve the pain during the attack, a hot fomentation of Hops and Tansy in spirits must be placed over the abdomen, frequently renewing it, and internally, the Compound Powder of Ipecacuanha and Opium may be given, or, what I have found to answer a most excellent purpose, the Tincture of Gelsemium, in doses of from half a teaspoonful to a teaspoonful or two, every half-hour until the patient experiences the peculiar effects of the remedy. When the pain is very severe from three to five drops of the Tincture of Aconite may be added to each dose of the Gelsemium. In many cases, a Spirit vapor bath affords almost instant relief. In some cases the Compound Tincture of Virginia Snakeroot will be found to have a very excellent influence. If the bowels have had a tendency to constipation, they should first be acted upon by some purgative medicine, previous to the administration of the other agent. The above measures are suited to either form of dysmenorrhea. The following will occasionally be found useful:—Take of Oil of Valerian, Ethereal Oil of Lupulin, each, two fluidrachms, Sulphuric Ether half a fluidounce; mix. The dose is from thirty to sixty drops every two or three hours in a wineglassful of a warm infusion of Camomile flowers.

During the intervals between menstruation, the following means must be employed to prevent a return of the disease:—Take of Camphor one scruple and a half, Sulphate of Quinia two scruples, Extract of Stramonium one scruple, Aletridin a sufficient quantity to form the whole into a pill-mass; mix, and divide into eighty pills, of which one may be given every four or five hours. Another valuable pill is composed of Extract of Conium Maculatum one drachm, Extract of High Cranberry bark, Red Oxide of Iron, each, two drachms; mix, and divide into thirty pills, of which one is the dose, to be repeated three times daily. I have known the long-continued use of the Compound Syrup of Partridge berry to cure many very severe cases.

The bowels must be kept regular, the surface bathed daily, and the diet must be nutritious and easy of digestion. An occasional Spirit vapor bath will be found of much benefit. Exercise in the open air is very important, and must not be neglected. If there be ulceration of the neck of the womb, it must be touched by a solution of Nitrate of Silver, or, Sesquicarbonate of Potassa, introducing these agents by means of a speculum. If there be falling of the womb, this must be reduced before any benefit can be expected to result from the other measures.

The *mechanical* form of dysmenorrhea can only be remedied by the delicate and cautious employment of bougies, commencing with one of small size, and gradually increasing it until the canal is sufficiently dilated. These must be allowed to remain in for only a few minutes at a time, and should be reapplied in two or three days, according to the irritability of the patient, and the symptoms produced. Any inflammatory symptoms of the part caused by their employment, will give way to rest and quiet, keeping the bowels regular, and an injection of warm water into the vagina two or three times a day.

IMMODERATE FLOW OF THE MENSES.

MENORRHAGIA, or Immoderate Flow of the Menses, are terms applied to all large discharges of blood which take place from the womb, at other times than during pregnancy or labor. The term Uterine Hemorrhage, or Flooding, is applied to all discharges occurring during labor, pregnancy, or which are owing to ulcers, polypi, wounds, &c., of the womb.

Menorrhagia may exist in two ways; the menstrual flow may appear every two or three weeks, instead of every four, or it may occur at the regular time, but in profuse quantity, or, it may occur at unexpected and uncommon seasons, as during pregnancy, or in the early months of suckling. It is divided into two forms, viz: the *active* and the *passive*.

SYMPTOMS. In *active menorrhagia*, beside the profuse discharge, there will be several other symptoms present, as, sudden flushings, alternating with chilliness, a sense of heat and general fulness, frequent, throbbing pulse, pains in the back and loins, which are frequently relieved upon the escape of blood. The blood is of a florid, red color. The discharge frequently continues from thirty to forty days, but in most cases, it ceases in from eight to ten days, reappearing at the next catamenial period.

CAUSES. Active menorrhagia may be occasioned by lifting heavy weights, tight lacing, excessive use of strong tea and coffee, cold, strong passions, abuse of stimulants, excessive venery, and whatever will occasion debility of the womb. Its periodical character will serve to distinguish it, though it may exist in connection with a uterine polypus.

TREATMENT. If the patient is of full habit, not much treatment will be required, unless it be found that the constitution is suffering from the discharge. The principal means to check it are, to keep the patient in a horizontal position, observing the utmost quietness; the bowels must be kept regular by mild laxatives, and any straining at stool must be avoided. If there be much heat, and a profuse discharge, cloths dipped in Vinegar and water may be applied over the private parts. Internally, astringents should be given, as ten or twenty grains every ten or twenty minutes, of a mixture of equal parts of Alum, Geranium, and Charcoal; or, Nitre ten grains, Alum five grains, Kino one grain and a half, may be triturated together for a dose, repeating it three or four times a day. The Oils of Fireweed,

and Fleabane, will frequently be found serviceable. I have frequently succeeded in checking the flow by administering every hour or two, a powder composed of Capsicum five grains, Opium half a grain, Ipecacuanha one grain; mix. A combination of Tincture of Cinnamon bark and Tincture of Yarrow, equal parts, taken in table-spoonful doses, and repeated three times a day, has often proved serviceable; a little Oil of Cinnamon may be added to cover its disagreeable taste. Warren's Styptic Balsam has been found prompt and effectual in many instances. In quite a number of cases recently, I have found a Tincture of the inner bark of Cotton root, made in Sweet Spirits of Nitre, a very effectual remedy, in doses of from thirty to sixty drops, three, four, or five times a day.

While using either of the above remedies, the patient may drink freely of some astringent decoction, as, one made of equal parts of Beth root, Blackberry root, and Geranium; or, other vegetable astringents. If the flow be very profuse, Hemastasis may be adopted with advantage. If much pain be present, a mixture of Sulphate of Morphia one-fourth or one-eighth of a grain, Capsicum five grains, Rosin five grains, may be administered every two or three hours in some Blackberry Syrup.

During the intervals between the flow, measures must be taken to prevent its return; the patient should be kept quiet; the diet should be spare but nutritious; if married, she should live apart from her husband for a time; and the bowels, as well as the surface, should be attended to, as in the preceding forms of menstrual derangement. The astringent decoction above named may be continued, or some other used as a substitute, and the following may be administered daily:—Take of Sulphate of Quinia ten grains, Extract of Belladonna three grains, Extract of Rhatany forty grains; mix, and divide into twenty pills. The dose is one pill, to be repeated three times a day.

Passive Menorrhagia may be the result of the active form, or it may have been passive from its commencement, as is apt to be the case among females of weakly, irritable, and delicate habits. It is a more serious form of hemorrhage than the active, and if not speedily arrested, may assume a formidable character.

SYMPTOMS. In the passive form of menorrhagia, the blood discharged is dark-colored, resembling venous blood; the strength of the patient becomes rapidly reduced, the countenance pale, the pulse quick and feeble, the extremities cold, and sometimes the whole surface of the body; a distressing sensation of faintness is generally experienced, giddiness, and occasionally nausea and vomiting; and a very common symptom is a sense of weight and pain in the head, especially over the eyebrows and forehead. In the more severe and dangerous forms, difficult and laborious breathing will be present.

TREATMENT. As in active menorrhagia, various agents may be required before any benefit will be experienced. In very mild cases, the Tincture of Cinnamon given in teaspoonful doses every hour or two, in a wineglassful of sweetened water, will be found of service. The Tincture of Cotton-root bark made in Sweet Spirits of Nitre, as named in the preceding form, will be found of great advantage in many instances. The preparation of Nitre, Alum, and Kino, named in the preceding variety, will also prove beneficial. Frequently, even in some very severe attacks of menorrhagia, I have derived much benefit from the use of the Tincture of Muriate of Iron, in doses of from fifteen to twenty drops, every half-hour, hour, or two hours, according to the urgency of the case, administering each dose in about half a gill of water. Warren's Styptic Balsam has been used with

good results in many cases; and the following will prove very effectual in arresting the flow, with many females:—Take of Tincture of Cinnamon, Tincture of Rhatany, Spirits of Turpentine, each, equal parts: mix. The dose is from half a teaspoonful to a teaspoonful, every hour or two, in some Port Wine, or other convenient vehicle. Another very valuable preparation, is composed of Tincture of Cottonroot bark, Tincture of Ergot, and Tincture of Cinnamon, each, equal parts: mix. Dose, the same as the preceding.

In very severe cases, when there is not too great a depression of the vital forces, cold vinegar and water may be applied to the parts on cloths, but if there is much depression, with coldness of the whole surface of the body, warmth must be applied to the feet, knees, arm-pits, &c., by means of bottles of warm water, warm bricks, irons, &c. Sometimes, when the discharge is very profuse and prostrating, it may become necessary to inject a solution of Alum, or other astringent, into the womb; this course has often proved effectual in checking the flow. A soft piece of sponge, or a number of soft pieces of linen, muslin, or silk, moistened with some astringent fluid, and passed into the vagina so as to plug it up, will, by causing a clot to form around the openings of the bleeding vessels, prevent, at least for some time, any further effusion. But the plug thus made must not be removed too soon, or the hemorrhage will recur—it should remain for three or four days. If it causes bearing-down pains, a desire to stool or to urinate, it must be removed. During the whole period of the attack, whatever may be the treatment pursued, it will be proper for the patient to drink freely of vegetable astringent decoctions.

The bowels must be kept regular by gentle laxatives, and the diet should be nutritious, allowing wine, ale, porter, &c., if the patient be much debilitated. During the intervals between these profuse menstrual discharges, means should be used to prevent, if possible, the menorrhagia; for this purpose the Compound Wine of Comfrey may be given, and the patient may drink freely of a decoction of some vegetable astringent, as Blackberry root, Beth root, &c., and the same may be injected into the vagina several times a day. When much debilitated the Sulphate of Quinia may be used in combination with Cimicifugin, or some preparation of Iron.

CESSATION OF MENSTRUATION.

CESSATION of Menstruation generally occurs after the menstrual function has been performed for thirty or thirty-five years, or about the forty-fifth or fiftieth year of life, and is always looked upon by females with some degree of anxiety. In consequence of the difficulties which occasionally develop themselves at this time, it has been variously called the “critical age,” the “turn of life,” the “change of life,” &c.

SYMPTOMS. Among healthy females it is not common for them to suffer much,—they generally become stouter, and the abdomen and breasts frequently enlarge to such an extent as to lead them to think they are pregnant. The discharge usually diminishes gradually, assumes a paler color, and eventually ceases permanently; or it may occur at uncertain, or distant periods, or alternate with a white discharge. Sometimes there will be a profuse bloody discharge, and the function becomes suspended for the remainder of life.

Among delicate females, and those who have suffered from previous diseases of menstruation, it is not uncommon to meet with excessive menor-

rhagia, or severe and repeated attacks of uterine hemorrhage, jeopardizing life. The same may be said of those who have been intemperate in their passions and pleasures. The symptoms attacking these vary considerably; much pelvic irritation, with a bearing-down sensation, a desire to stool, or a forcing backwards, frequent inclination to urinate, heat and smarting of the parts, and tenderness of the vagina, are very apt to be present. A troublesome itching of the parts of generation is a common accompaniment. The person becomes irritable, uneasy, restless, with more or less considerable changes of the moral and mental dispositions. With some, the skin loses its color and suppleness, becomes sallow and wrinkled, the hair falls off, or turns gray, the breasts, at first flaccid and pendulous, finally disappear, and the voice becomes masculine.

At this time, various diseases are apt to become manifested, some of which may probably have existed for some time in a latent state, as, vertigo, hysterics, colic, piles, cutaneous eruptions, ulcers of the legs, hemorrhages from different parts, inflammations of various organs, dyspepsia, palsy, apoplexy, insanity, cancer of the womb, profuse sweats, &c., &c.

TREATMENT. Generally, but little else is required in the treatment, than to keep the bowels regular, the skin clean and healthy, adopt a light, nutritious diet, and proper regimen, and to avoid exposure to cold, or any causes which may excite local disease. When the discharge ceases suddenly, or when there is giddiness, or occasional pains in the head, a mild purgative may be taken, as the Compound Powder of Jalap, or the Compound Powder of Leptandrin, and this may be repeated whenever the symptoms require. If menorrhagia is present, treat it as already recommended, as well as hemorrhages from various organs. When there is a tendency to secondary attacks, the disease which is developed must be treated as though it were a primary affection. In most cases where there is a tendency to secondary diseases, alteratives will be required, and none will be found to excel the Iodine pill, in conjunction with the Compound Syrup of Stillingia. Any nervous derangement must be combated with stimulants, antispasmodics. or sedatives.

CHLOROSIS.

CHLOROSIS, or Green Sickness, is a disease common to females, especially at the age of puberty, and is very apt to be associated with a retention of the menses; though this may and does frequently occur without any chlorotic tendency.

SYMPTOMS. Chlorosis is characterized by a state of melancholy and disposition to inactivity; the female becomes silent and gloomy, frequently sighing involuntarily, or shedding tears without cause; the countenance becomes pale, of a greenish tint, and bloated; the eyes languid, and the eyelids swollen, with a dark areola around them, especially in the morning; the skin is dry and cool, and has a flabby or doughy feel; the pulse is frequent and easily compressed; the breathing is hurried or laborious; the digestive functions deranged; the bowels costive or irregular; the stools sometimes become white and hard, at other times fluid; the sleep is disturbed, and the dreams unpleasant; the intellect becomes dull, and the mind is occupied with fanciful notions or projects; headache is usually present; ringing of the ears; the face cold; the nostrils dry; neuralgic pains, and palpitation in the neighborhood of the heart or stomach. The tongue is generally coated white, and acid regurgitations take place fre-

quently, with nausea, especially in the morning. There is often an accompanying cough, of an irritable and distressing nature, leading the friends to suppose the patient is laboring under consumption. Sometimes dropsical swellings occur in various parts of the body, or the patient may be attacked with St. Vitus' Dance, hysterics, or epilepsy. Leucorrhea is generally present with a retention or suppression of the menstrual discharge; or, if any fluid escapes monthly, it contains but little coloring matter, and less fibrine than usual. All the above symptoms will not be present in any one patient, but a great proportion of them will; and they will vary in their character according to the circumstances attending each case.

A peculiarity of this disease is the wonderfully capricious character of the appetite, sometimes exhibiting a strong desire for acids, at others, greedily devouring substances having no nutritive properties whatever, as earth, chalk, ashes, charcoal, &c. If the disease is allowed to progress without any beneficial treatment, severe pain attacks the head, mostly in the back part; the abdomen becomes swollen and hard; the difficulty of breathing, palpitation, fainting, and debility increase; thirst becomes annoying; diarrhea ensues, with hectic fever, rapid emaciation, and death.

CAUSES. The causes of chlorosis are various and numerous. It may be owing to indigestion; to living in low, damp, and cold situations, secluded from the rays of the sun; bad food; late hours; excessive use of vinegar, green fruits, and all crude articles; indulgence in warm drinks; want of exercise; and a sedentary, lazy, and voluptuous mode of life. Females of rapid and premature growth, those of a weak, delicate constitution, of a scrofulous habit, or of a nervous temperament, are more especially liable to it, as well as those who practice masturbation, who labor under great depression of mind, who are affected with some menstrual derangement, and who continue for a long time in a state of widowhood.

TREATMENT. In chlorosis, there is a general debility of the whole nervous system, accompanied with an unhealthy condition of the blood, which is very deficient in iron and the red globules. The treatment, therefore, must be directed to both of these conditions, and no permanent benefit can be expected, unless the medicinal measures be assisted by a strict attention to the hygienical. It is very important that the patient be removed from all causes which may predispose to the malady, transferring her from an improper atmosphere to one pure, dry, and moderately warm. She should be made to exercise every day, no matter how averse she may be to it,—any indulgence in this matter may lead to a fatal result. Exercise *must* be taken, it is imperatively necessary; walking, riding, swimming, ball-playing, boat-excursions, and calisthenic exercises, according to her capability, must be practised. If her friends are able, traveling will be of much advantage, in consequence of the change of scenery, air, exercise, and other circumstances tending to keep up an excitement of both mind and body. A visit to some chalybeate springs, with a free use of the water, will be found of great benefit. Tight corsets, and all tight ligatures on any part of the body, must be forbidden. The hours of sleep must be regulated, having certain hours for retiring to bed, and for rising; never allowing the sleep to exceed nine hours. Sleeping in the day must not be allowed. The bed occupied by the patient must be neither too warm nor too soft—a mattress is to be preferred—a feather-bed is abominable. The diet should be generous and easy of digestion, consisting of farinaceous vegetables, ripe fruits, bitter and aromatic plants, fresh eggs, roast meats, &c. During meals, some Madeira or Champagne wine may be drank, or even good French brandy, ale, porter, &c. For a common drink, some chalybeate water should be preferred; tea and coffee should not be used.

As a medicinal treatment, the bowels should be kept regular, but not actively purged; the Compound Pill of Leptandrin may be used for this purpose, and if constipation be very obstinate, one-twentieth of a grain of Extract of *Nux Vomica* may be added to each pill, provided that not more than two pills are required every night for a dose. The surface of the body should be frequently bathed with a weak alkaline solution, to which some Alcohol is added, in order to excite the action of the capillary vessels, invite the blood into them, and promote perspiration. A Spirit vapor bath every week or two, will be of great benefit. Flannel should always be worn next the skin; and daily frictions with a coarse towel, aided by all other means to bring about a healthy condition of the capillary system, should be persevered in. Acidity of the stomach may be overcome by Bicarbonate of Soda, or Potassa, or by Magnesia, aided by vegetable tonics, to impart tone to this organ, as Golden Seal, Swamp Milkweed, Quassia, Gentian, &c., which may be given in infusion or extract.

To change the condition of the blood, some preparation of Iron must be given, as the Sulphate of Iron, Carbonate of Iron, Tincture of Muriate of Iron, &c., and in scrofulous patients the Iodide of Iron. The following have been used with good results:—1. Take of Carbonate of Iron five drachms, Assafetida seventy-five grains, Podophyllin nine grains; mix, and divide into twenty-five powders, of which one is a dose, to be repeated three times a day. 2. Take of Sulphate of Iron twenty-four grains, Sulphate of Quinia twelve grains, Sulphate of Morphia one grain and a half, Extract of Gentian a sufficient quantity to form the whole into a pill-mass; mix, and divide into twelve pills. The dose is one pill, to be repeated three times a day. 3. The Compound Pills of Ferrocyanuret of Iron. Occasionally, marriage cures chlorosis. The various unpleasant symptoms which may present from time to time, must be met according to their indications.

LEUCORRHEA, OR WHITES.

By the terms Leucorrhœa, Fluor-albus, or Whites, are meant a whitish or colorless discharge from the vagina, being the result of an unhealthy condition of the vagina, the womb, or of both combined. It is a very common malady among women, but few passing through life without having one or more attacks of it.

SYMPTOMS. The leucorrhœal discharge is more or less profuse, and varies much, both in quantity and color; in mild cases, it is whitish, in others, it is of a brownish or greenish hue, and frequently so acrid as to excoriate the external parts. When the discharge is abundant, or of long standing, it occasions much debility, with a sense of pain and weight in the back and loins, pain in the stomach, colic, impaired or depraved appetite, acid stomach, headache, paleness of the countenance, hollowness of the eyes, chilliness, palpitation of the heart, and great mental depression. If no beneficial measures be pursued, the constitution soon becomes impaired and exhausted, emaciation ensues, the flesh becomes loose, the pulse small and frequent, the breasts soft, the breath fetid, the eyelids bloated, hysterics are common, and the feet and ankles swell, and are constantly cold. The menstrual discharge frequently becomes diminished or suppressed, obstinate constipation is a common symptom, and the urine is generally turbid, flocculent, and scanty. Dropsical swelling of the whole body is often present.

Leucorrhœa is divided into two varieties, the mucous and the purulent;

of the mucous, there are two forms, characterized by the properties of the discharge, and the part from which it is secreted.

When the mucous discharge is from the neck of the womb, or its canal, it is a transparent, glairy fluid, of the consistence of the white of egg, has an alkaline reaction, changing reddened litmus paper to its original blue, communicates no stain, but only a starchy hardness to linen upon which it has been allowed to dry, has such a slimy, ropy, and tenacious consistence, that it is with great difficulty it can be removed from the neck of the womb, and, examined under the microscope, it is found to contain a large number of mucus-corpuscles, (see Fig. 18.) This is a common and most obstinate form of leucorrhœa.

When the mucous discharge is from the vagina, it is of an opaque, whitish character, of the consistence of cream, has an acid reaction, changing blue litmus paper to red, communicates a stiffness to linen upon which it has dried, leaving a greyish spot, deepest at its edges, is never ropy, and under the microscope exhibits a large number of epithelial scales. (See Fig. 40.) This form is frequently accompanied with a relaxed condition of the vagina, and troublesome itching of the parts.

When the leucorrhœal discharge is of a purulent character, it is colored greenish, or any intermediate shade between a light yellow and dark brown, leaves deep stains on linen, which are removed with difficulty by washing, and exhibits under the microscope a large number of pus globules. (See Fig. 20.) Most generally this discharge issues from an excoriated or ulcerated surface on some part of the neck of the womb; occasionally it proceeds from the vagina. This, however, may be determined by its acidity or alkalinity. Women laboring under this form of leucorrhœa, are very subject to abortions.

Leucorrhœa sometimes becomes of so acrid and irritating a character as to communicate a disease very closely resembling gonorrhœa. And the determination of this matter, upon which the happiness of a family depends, is attended with much difficulty. Great care must be taken by the physician in pronouncing positively in cases of this kind, as a mistaken diagnosis will be a source of much misery and mortification. Dr. Donnè, of Paris, states that when the syphilitic matter is examined under a microscope of about 300 diameters, a multitude of transparent animalcules are seen, of a round or oval form, in groups of from two to six, and which move in every direction a very delicate, thread-like appendage; in leucorrhœal matter these are absent. But as leucorrhœa is frequently the result of secondary syphilis in the husband, it is possible that when it originates from this cause, animalcules of a similar character may be present, and a diagnosis based upon this microscopical investigation would condemn an innocent female to disgrace and wretchedness.

CAUSES. Leucorrhœa arises from many causes, the most common among which is excessive coition; and on this account a women wedded to a sensual, animal husband, whose only consideration for his wife is to compel her to gratify his selfish passions without regard to her health, is much to be pitied, as she is constantly liable not only to the present disease, but to

Fig. 40.



a. Scaly epithelium from the vagina.

b. Large organic globules, resembling pus globules, sometimes found in the urine.

every malady which may afflict her sex. And to this cause, is, no doubt, attributable by far the greater number of those diseases so common at the present day among women in all sections of the country. Other causes, however, may produce leucorrhea, as a rapid succession of children, colds, dampness, difficult deliveries, masturbation, abuse of warm baths, purgatives, or emmenagogues, prolonged suckling, irritation of the rectum by thread-worms, relaxation of the system by too much warmth, abortions, mechanical injury by pessaries, secondary syphilis of the husband, sedentary life, sudden, mental, or physical shocks, excessive menstruation, &c.

TREATMENT. In the treatment of leucorrhea, as in the previous diseases, the bowels must be kept regular, and the surface of the body attended to by daily bathings and frictions. Internally, the Compound Wine of Comfrey may be given in conjunction with some preparation of iron, as the Citrate of Iron, Sulphate of Iron, &c.; in strumous or scrofulous patients the Iodide of Iron will be found of great value; in cases with excessive menstruation, the Tincture of Muriate of Iron will be preferable. I have found a pill composed of Sulphate of Iron, Leptandrin, each, eight grains, Podophyllin two grains, Alcoholic Extract of Black Cohosh a sufficient quantity to form a pill-mass, a very valuable preparation. The mass is to be divided into eight pills, one of which may be given for a dose, and repeated three or four times a day. In the purulent form of leucorrhea which is generally accompanied with a hypertrophied, indurated, excoriated, or ulcerated condition of the neck of the womb, alteratives will be required, as the Compound Syrup of Stillingia with Iodide of Potassium. or, the Iodine Pill. Among females subject to gouty, rheumatic, or neuralgic diseases, the Compound Tincture of Colchicum should be used, alternately, with the Compound Wine of Comfrey, changing them every week or two.

Local applications must not be omitted in the treatment of this affection. Injections into the vagina three or four times a day will be found very useful; they may be composed of a strong decoction of Black Cohosh root, with Tannic Acid added; or a solution of Tannic Acid in Port Wine may be injected. A very excellent vaginal injection is composed by dissolving one or two drachms of Tannic Acid, and half an ounce of Alum in a quart of water; this may be used three times a day, employing one-third of the mixture each time. In using injections, they should be retained for some time in the vagina, which may be accomplished by the female lying upon her back with the hips well elevated. It will frequently be of importance, especially in vaginal leucorrhea, to keep the vaginal walls from coming in contact with each other, and this may be done by introducing soft sponge or lint, moistened with one of the above astringent fluids into the vagina. Other agents have occasionally been found efficacious, as an injection of a diluted Tincture of Acetate of Iron, a Super-saturated Solution of the Protosulphate of Iron, or, a decoction of equal parts of Black Cohosh and Geranium.

When the discharge is acrid and excoriating, and manifests a decidedly alkaline reaction, the injections should be composed of a solution of Bicarbonate of Potassa or Soda, in an infusion of Elm bark, Marshmallow root, Hops, or Stramonium leaves; and they should be continued until the irritating quality of the leucorrheal matter is removed. A decoction of Black Willow bark, (*Salix nigra*), used internally and as an injection, has been recommended as efficacious. I have known the following domestic preparation to cure several obstinate cases:—Take of finely grated Nutmeg, and powdered Alum, each, equal parts; mix. The dose is a teaspoonful in some molasses, repeated three times a day.

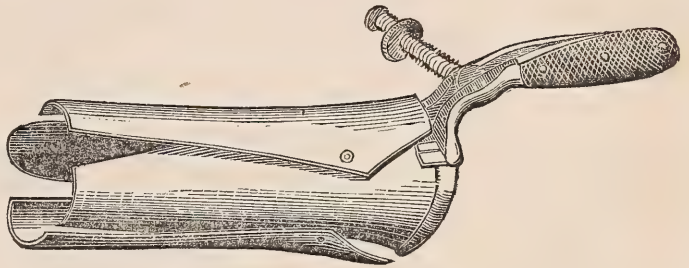
When the neck of the uterus is excoriated or ulcerated, the part affected

must be thoroughly touched or bathed, two or three times a day, with the Tincture of Muriate of Iron, diluted or not, according to its action; or the following may be applied:—Take of Sulphate of Quinia forty-eight grains, Elixir of Vitriol two fluidrachms, Distilled Water six fluidounces; mix. If the canal of the uterine neck appears to be in an excoriated or ulcerated condition, some lint, moistened with one of the above liquids, may be carefully introduced within the canal by means of a probe. The application of agents to the neck of the womb will require the introduction of the speculum to bring the part into view, as well as to facilitate the introduction of the remedies, and in all cases, previous to their application, the neck should be cleansed from all adhering mucus or pus by means of a piece of sponge or lint attached to the end of a stick; and by a similar means apply the above liquids.

The patient should use a light, nutritious, easily digested diet, avoiding the use of tea and coffee, and should take moderate exercise daily. Where there is any pain, or irritation of the parts, tenderness, or disposition to slight bleedings, not only should the patient keep quiet, avoiding all fatigue, but sexual intercourse must be positively forbidden.

Figure 41 is a representation of Ricord's four-valved vaginal speculum, which is generally used by physicians. However, there are several other forms of this instrument suitable to various conditions, views of physicians, &c. The object of a speculum is to examine the condition of the lower part of the neck of the

Fig. 41.



Ricord's four-valved Speculum.

womb, and the walls of the vagina, as well as to afford facilities for the application of remedies to these parts. It is more especially adapted to married women and widows, being used among unmarried females only in severe and obstinate affections, which resist the ordinary means of treatment. Since the introduction of this instrument into medical practice, the diseases of females have been much better understood, and their sufferings more speedily and permanently arrested; and from the immense benefits following its employment, the sex are under many obligations to its originator. But, notwithstanding its value, there is no doubt that while some physicians neglect to avail themselves of its advantages, others resort to its use entirely too freely, instituting uterine examinations upon the most trivial grounds, and sometimes to an injurious and unwarrantable extent. Great care should therefore be had in selecting a careful, experienced, and moral physician, in those cases wherein the use of a speculum is advised or required.

The introduction of the speculum requires no unnecessary exposure on the part of the female; she may wear a pair of drawers, or a loose underdress, with an opening in it sufficiently large for the physician to pass the instrument through, into the vagina, and which should be done carefully, without causing any pain; and the speculum should always be warmed and well oiled or greased to admit its easy introduction. The position of the female at the time of introducing the speculum will be on her back, with the hips elevated,

and each foot resting on a chair; or, as required in many cases, she may lie upon her left side, with the knees drawn up as closely as possible to the abdomen. The parts must be so situated that when the speculum is introduced the light may pass into it, and give a clear and distinct view of the several diseased surfaces.

FALLING OF THE WOMB.

AMONG the various displacements of the womb, there is none so common as Prolapsus, or Falling of the Womb, by which is meant a condition of this organ in which it is much lower than it should be. It is more generally met with among married women, especially those who have borne children, but may occur among the unmarried. When the womb has fallen so low as to pass out externally, it is termed *perfect prolapsus*; when it remains within the pelvis, it is termed *procidentia uteri*, or *imperfect prolapsus*. It is sometimes of a most obstinate character, resisting all remedial measures, and proving a source of suffering to the female for the remainder of her life.

SYMPTOMS. Prolapsus of the womb varies from a very slight descent below the natural position of the uterus, to its projection through the external parts, occasioning alterations in the relative situation of neighboring organs, from which many unpleasant symptoms arise. It generally comes on with a feeling of fulness in the pelvis; a weight and bearing down in the parts, with a sensation of dragging, which extends from the navel to the loins; pains in the back extending round into the groins; considerable distress in standing or walking; the bowels are usually constipated; and the urine will be unnaturally hot, and pass with more or less difficulty. Most of these symptoms are relieved when the patient lies down. Leucorrhœa, excessive menstruation, or painful menstruation, are frequent attendants upon prolapsus of the womb.

From its intimate relation with the womb, the stomach soon becomes deranged, the appetite is irregular or deficient; the stomach and bowels lose their tone; rolling of wind in the bowels, accompanied with a rumbling noise, is common; the spirits become depressed; and the patient loses all desire for exercise, employment, or even life. The symptoms common to this complaint are varied and numerous, so much so, that a careless practitioner will be led to suspect disease of various other organs, which these frequently simulate.

CAUSES. Falling of the womb is owing to a relaxation and want of tone of the vagina, and of the ligaments which sustain this organ. This may arise from over-exertion, straining at lifting, coughing, violent vomiting, &c.; it may be the result of many childbearings, or repeated floodings, menorrhagia, leucorrhœa, and frequently occurs from a general debility of the system. It may take place from getting up too soon after delivery, and may also happen during pregnancy, or even parturition. It is sometimes complicated with stone in the bladder, or with polypus of the womb.

TREATMENT. In recent cases of prolapsus the influence of agents upon the mucous membrane of the vagina, aided by rest in the recumbent posture, will generally effect a cure, if persevered in. The agents used may be injections of cold water, or of astringent infusions, as of White Oak bark, Geranium, Bethroot, Marsh Rosemary, &c., or a solution of Alum. Cold water applied to the abdomen, back, and genital parts, will likewise be beneficial. It must be remembered that an inflamed condition of the vaginal walls, or uterus, will be aggravated by the use of astringents; hence, when

any inflammation is present, it must first be reduced before employing the astringent local applications.

But when the case is of long standing, or the prolapsus is very great, it may become necessary in conjunction with the preceding means to give artificial support to the fallen womb by means of pessaries.

When there is irritation or inflammation of the vagina or uterus, or any organic disease of the parts or of the neighboring organs, a pessary must not be used, as it will only tend to aggravate the existing difficulty; these conditions must, therefore, in all instances, be first reduced by appropriate means before the introduction of a pessary is attempted. Irritation or inflammation may be overcome by the internal use of Tincture of Aconite, Extract of Belladonna, or Compound Powder of Ipecacuanha and Opium, aided by injections of an infusion of Hops and Lobelia, an infusion of Belladonna, or of Elm bark and Stramonium leaves. Equal parts of Peach leaves, Solomon's Seal, and Hops, in an infusion or decoction, will form a very excellent vaginal injection. If ulceration of the neck of the womb be present, it must first be cured by appropriate means; in most cases the remedies named for excoriation and ulceration under Leucorrhœa, on page 520, will be found sufficient. Other difficulties must be met according to their indications.

Pessaries are of various forms, and are made of sponge, wood, ivory, gum-elastic, glass, and silver coated with gold. Among these I prefer the latter, and the one known as Blundell's pessary, although costly, will be found adapted to more cases than any other; one great advantage attending it is, that it can readily be removed at night, for when the patient is in a horizontal position, a pessary is not required. To introduce it, warm and oil it, and carefully and gradually pass it into the vagina as high up as possible. The instrument can be held in its place by means of pieces of tape fastened to each end of the cross-bar at the lower end of the stem, the upper ends of which pieces of tape are attached both before and behind to a bandage passing around the abdomen. In the absence of this, an egg-shaped sponge pessary, or an elastic pessary inflated with air, may be used, but they require to be frequently removed and cleansed, and are not as useful as the preceding. The selection of a pessary is usually according to the physician's ideas, and they will be found to vary considerably in their choice. If pregnancy should happen, there will be no occasion for the pessary after the third month, and by a careful and proper course of treatment after delivery, a return of the prolapsus may be prevented.

The bowels must be kept regular by mild laxatives; and any heat or difficulty in urinating may be relieved by drinking freely of an infusion of Marshmallow and Spearmint. The diet must be light, but nutritious and easy of digestion, and, in some instances, careful and moderate exercise may be allowed. If the patient is pale and anemic, or much debilitated, the Compound Wine of Comfrey may be used, or some preparation of Iron, as, the Citrate of Iron and Quinia, Iodide of Iron, &c. There is a method of curing prolapsus by certain species of exercise and manipulations, without the use of pessaries, and which I have found decidedly beneficial, but it would be impossible to give a satisfactory explanation of these means in a work like the present, as it would require almost a volume of itself to fairly present the matter.

DISEASES OF PREGNANCY.

THERE are certain symptoms common to the pregnant female, which are peculiar to this condition, and are in fact indications of the healthy act of conception, and should not, as a general rule, be interfered with. In some cases, however, they become so much increased in severity or protracted in duration, that they may be termed the "diseases of pregnancy," and will require treatment to remedy them.

Females, when pregnant, should never ligate or compress any part of the body or limbs, with belts, corsets, &c., as this may not only give rise to abortions, enlarged veins of the legs, and other difficulties, but will likewise tend to produce dropsy of the head, or deformity of the child, as well as positions of the infant in the womb, known as cross-births, breech-labors, &c., which frequently render instruments necessary to bring the child into the world, and may prove fatal to both mother and offspring. The diet also requires particular attention, using light and nutritious food, and avoiding all alcoholic drinks, fatty, acidulous, and indigestible food. Gentle exercise daily, out of doors, is very important during the first months of pregnancy; fresh, pure air, with bathings of the whole body once or twice every week, cannot be too highly recommended. It is a very common practice among married persons to indulge in cohabitation during pregnancy; but this is a very erroneous and irrational custom, and though positive evil does not immediately follow, yet it is certain to happen in time; we find that females thus exposed are more liable to attacks of fluor-albus, excessive floodings, miscarriages, &c., or some derangement of the mind or body of the offspring. Those females, especially, who labor under fluor-albus, who are subject to large or excessive menstrual discharges, who abort frequently, who are exceedingly delicate and sensitive in their nervous formation, cannot be too careful not to permit the sexual act when they are pregnant.

The following are among some of the most common diseases of pregnancy: *vomiting, diarrhea, cramps, and heartburn*, may be treated as heretofore recommended.

Constipation, should always be avoided if possible, it is a common and annoying symptom during pregnancy. It may commonly be overcome by warm injections, as an infusion of two parts of Boneset and one of Senna, to a pint and a half of which, half a pint of Molasses may be added, and half a wineglass of Castor Oil; one-half of this may be taken as an injection, and repeated in about twenty minutes if necessary. The injection must be repeated so as to keep the bowels regular daily. Purgative medicines by mouth are not often needed, and should be avoided, because of their liability to occasion miscarriage. If physic is required, use the powder of Rhubarb and Bicarbonate of Potassa named under the treatment of Dyspepsia. It is much better to use a diet which will keep the bowels open, as stewed, ripe, or dried fruits, brown bread, figs, dates, mush, and molasses, &c.

Severe Headache may be relieved by an infusion of Scullcap, or Valerian, or Ladies' Slipper, &c.; sometimes the narcotic Extracts will answer, as of Hyoscyamus, Stramonium, &c. One of the following pills for a dose, and repeated three times a day, will be very useful:—Take of Sulphate of Quinia six grains, Extract of Belladonna a grain and a half, Alcoholic Extract of Black Cohosh eighteen grains; mix, and divide into twelve pills. In females of full habit, active diuretics, may be given as an infusion of Cleavers, Haircap moss, &c., keeping the bowels regular.

Convulsions during pregnancy, are generally of an hysterical nature, and

must be treated as recommended under Hysteria; if they are epileptic, treat as advised for Epilepsy.

Cough may be remedied by some one of the agents named on pages 264 and 265. When it is severe, constant, hacking, and harassing without expectoration, in addition to the internal means, a plaster may be placed on the back, extending from one shoulder-blade to the other, as the Compound Capsicum plaster, or Compound Resin plaster. Two parts each of the Tincture of Sculleap and Tincture of Lupulin, mixed with one part of Tincture of Hyoseyamus, and given in doses of a teaspoonful during a severe paroxysm of cough, has frequently proved very efficacious.

Edematous swellings of the limbs may be benefited by keeping the bowels regular, using freely of diuretic infusions, as Queen of the Meadow, Dwarf Elder, Hair-cap Moss, &c., and keeping the limbs constantly supported with a properly applied bandage.

Enlarged or varicose veins cannot be removed, at least during the condition of pregnancy. The patient should use a very light diet, keep the bowels regular, and apply bandages, to compress and support the veins; too much pressure will be injurious. Elastic stockings are superior to the bandages. The patient must be as little as possible on her feet, chiefly keeping in the recumbent position.

Piles are common during pregnancy, and are more apt to be present when the bowels are costive; though they are sometimes met with during an attack of diarrhea. If costiveness be present, it must be obviated by the means already named. To relieve the piles, (for it is an almost impossible matter to remove them while the pregnancy continues) the following preparation may be employed:—Take of Stramonium ointment, half an ounce, powdered Alum one drachm, Sulphate of Morphia one grain; mix well together, and apply on a small piece of cotton. For other applications, see Piles, in the Surgical Part of the work.

If the piles are very painful, cold applications, or a fomentation of Poke leaves, or an Elm poultice may be applied to them; sometimes the application of two or three leeches will be necessary. If they bleed, apply astringents, or use the means named under Piles, in a subsequent part of the book. The attempt to cure piles by ligating, or cutting, &c., while pregnancy exists, is dangerous. When piles are present during gestation, great attention should be paid to the bowels and to the diet, avoiding liquors, spices, heating and constipating articles, and exercising or “being on foot” as little as possible.

Pain in the right side is occasioned by the enlarged womb pressing against the liver; this cannot be removed until after the birth of the child, but some relief will be apt to follow the use of a light diet, a regular condition of the bowels, and resting on the left side during the hours of rest.

Itching of the genitals, or an eruption of the parts with excessive itching, will be relieved by washing the parts two or three times a day, with the Borax Lotion with Morphia.

Suppression of Urine, as well as difficulty in urinating, will be benefited by a free use of mucilaginous diuretics, as an infusion of Marshmallow root and Trailing Arbutus; or, of Marshmallow and Peach leaves. Ten or twenty drops of sweet Spirits of Nitre may also be advantageously taken in the infusion, repeating the dose three or four times a day. Liquor Potassa is frequently efficacious.

Retention of Urine requires stimulating diuretics, as, Dwarf Elder, Wild Carrot-root or seed, Queen of the Meadow, &c. The urine must not be allowed to remain too long in the bladder before its removal either by a

catheter or naturally. The female must endeavor to urinate frequently, not allowing the bladder to become filled with fluid.

Toothache may be palliated by some of the means mentioned on page 32.

Longings or *Capricious Appetite* when not directed to absolutely unhealthy or pernicious food or drink may safely be indulged. The dislikes of the patient should not be meddled with.

Swelling and Pain in the Breasts is sometimes very distressing; to relieve them, a warm fomentation of Hops may be applied, together with a liniment composed of Oil of Sassafras, Sweet Oil, and Laudanum, equal parts. The bowels must be attended to, and the breasts kept free from any compression.

ABORTION, OR MISCARRIAGE.

WHEN the fetus is expelled from the womb at any time previous to the seventh month, it is impossible for it to continue its existence, and this process of expulsion is termed an *abortion*. After the seventh month the child may live, and its expulsion at any time from the seventh month to the full period, is called a *premature delivery*. An abortion is dangerous chiefly on account of the flooding which may ensue, and which becomes of a more hazardous nature in the latter months of pregnancy. In the first two or three months, hemorrhage is seldom so excessive as to threaten life.

SYMPTOMS. These depend considerably upon the causes, and the time of the pregnancy. Thus, for the first ten or twenty days after conception, there may be hardly any pain, and but little blood, so that the female will be more disposed to look upon it as a menstrual derangement instead of an abortion. But in the later periods of pregnancy, and especially after the third month, various symptoms may usher in the abortion; there will be more or less febrile symptoms, nervous excitability, deranged appetite, coldness of the feet and legs, a purplish discoloration of the skin around the eyelids, which are more or less puffed up, shooting pains are frequently felt in the breasts, which become soft and lose their elasticity, lowness of spirits, a feeling of pressure or bearing down in the lower part of the bowels, frequent calls to evacuate the bowels or bladder, and slight pains in the back, which come on at intervals, gradually increasing in severity, extending in front, and eventually becoming severe and expulsive, or true labor-pains. As the pains advance, a discharge of a bloody character ensues, becoming more profuse as the abortion progresses; finally the bag of waters are broken, and the fetus is expelled; occasionally it comes away entire, being surrounded by the bag of waters. It is often the case that the first indication of an abortion is the flooding, followed by pains, absence of motion in the child, and its ultimate expulsion.

After the child has been expelled the flooding and pains generally disappear gradually; but if a portion of the placenta or after-birth be left within the womb, the pains may continue with more or less severity and irregularity, the flooding will frequently become excessive and alarming, and offensive, putrid discharges will take place from the vagina.

The most dangerous period in which an abortion can occur, is from the third to the sixth month of pregnancy, the germ being of large size, and the mouth of the womb not in a condition to properly dilate and permit its ready egress. If an abortion occurs during a severe fever, a high inflammatory attack, &c., it is very dangerous. Commonly, in an abortion that progresses gradually, the flooding is less than in one which advances with quickness; but the system is more apt to be injured by the former.

CAUSES. Many circumstances are capable of inducing abortion, and those which would affect one female, will frequently be found to have no influence upon others. Abortion may be owing to attacks of epilepsy, hysteria, dysentery, &c.; to acute attacks, as scarlet fever, small-pox, &c. Females whose systems are tainted with syphilitic disease, or scrofula, or who labor under excessive leucorrhea, are apt to abort; tumors in the pelvis or other abnormal formations, displacements of the womb, ulceration of the neck of the womb, rheumatic affection of the womb, &c., are all causes of abortion. Disease of the fetus is a common cause, being generally received from the parent, as syphilis, small-pox, &c. Vaccination during pregnancy will often occasion a miscarriage; and it is dangerous even to vaccinate a woman who has been recently delivered. Accidents also give rise to abortion, as powerful exercise, heavy lifting, blows, bruises, severe jars, long-continued and violent dancing, rough riding, excessive coition, &c. Sometimes the bag of waters may be so thin and delicate that the mere act of sneezing, laughing, slight straining, hanging up curtains, bed-making, pushing in a drawer with the foot, &c., will rupture it, and thus cause an abortion; it has also been caused by emetics, powerful purgation, and great mental excitement. In many instances it is produced by long-continued suckling of a child, and also by the criminal means frequently employed for this purpose. Females of full habit and voluptuous are very apt to abort. When the motions of the fetus cease, the morning sickness disappears, and the breasts become soft and lax, it is an indication of the death of the child, and abortion will certainly come on; the same will happen when the waters have been evacuated.

TREATMENT. The female constitution is apt to be permanently impaired by an abortion, or disposed to constant repetitions of the accident, on which account all proper measures should be adopted to prevent its progress, if possible; except when there are good reasons for believing that the child is dead, in which case, measures should be pursued to facilitate its rapid expulsion, and conduct the female safely through the process. In many cases presenting the symptoms of an approaching abortion, but little more will be demanded, than a state of quietness in the horizontal posture, having the hips elevated higher than the head, and using cold lemonade or other refrigerant drinks. Two or three grains of the Compound Powder of Ipecacuanha and Opium may be given every hour or two, to lessen any excitability of the system, and remove the pains. Should the symptoms still progress, notwithstanding these means, in most cases they will cease entirely in a few hours after having placed a blister or a Mustard plaster, about four inches square, over the lower part of the spinal column, (*sacrum*.)

Any excessive flooding may be arrested by the application of cloths moistened with some cold fluid, to the parts, and over the lower part of the bowels; cold water, iced water, or vinegar and water may be used. Internally, a mixture of five grains of powdered Alum, and one grain of grated Nutmeg, may be given for a dose, repeating it every fifteen or thirty minutes, or every hour. The Oil of Fireweed, or the Oil of Fleabane, are also serviceable, and may be given in doses of five or six drops rubbed up with sugar, repeating them every ten or twenty minutes, or at longer intervals, depending upon the urgency of the case. The course recommended in Menorrhagia, on page 513, will frequently be useful in checking the flooding.

When the flooding is very profuse, and there is no doubt but that the fetus will be expelled, the vagina may be plugged with pieces of silk, linen,

or muslin, with which it must be well closed up, keeping them in this situation by means of a compress and bandage. In the course of six or seven hours this plug must be removed; but on no account must it remain in the vagina longer than twenty-four hours. By this method, the flow of blood will frequently be checked. But it must be recollected, that it is exceedingly improper to employ the plug, except during the first five months of pregnancy; if used after this period, it will give rise to what is called a "concealed hemorrhage," in which the flooding continues, but does not appear externally, owing to the presence of the plug, which obstructs its flow. When the symptoms of an abortion have been stopped, the female should subsequently continue for some time in a recumbent posture, being very careful in her movements and exercise, lest a return of the flooding take place.

If, by the means recommended, the pains, flooding, and other symptoms of abortion continue, gradually increasing in severity, or, if there is no doubt that the fetus will be expelled, the only course to pursue is to permit the case to proceed the same as in natural labor, keeping a strict surveillance upon it to promptly meet any dangerous symptom. When the womb is acting energetically, and the abortion is favorably progressing, any intermeddling, not actually demanded, would be exceedingly reprehensible, and might create fatal results. And all the discharges, instead of being thrown away, should be shown to the physician, that he may be enabled to determine with certainty, whether the whole of the ovum or germ has been expelled. This should be the invariable rule of every aborting female.

If the efforts or pains of the womb are not powerful enough to complete the delivery within a reasonable time, it may be assisted in its action by the aid of medicines which will increase its contractile power; thus, a warm and strong infusion of Blue Cohosh, Black Cohosh, or Ergot, may be administered, or these articles may be mixed together in equal parts, and given in infusion. The inner bark of fresh Cottonroot, made into a strong infusion, will in most cases, excite the uterus to energetic action. Should these measures fail, the flooding still continuing, with feeble and inefficient pains, it will be proper for a physician, (and no one else,) to pass a finger, or a small wire blunt hook through the canal of the neck of the womb, for the purpose of gently and carefully removing the membranes, which, when effected, will at once expedite the abortion.

Cold applications to the parts, and internal means to check the flooding should be continued, as Tincture of Cinnamon in half-teaspoonful doses, every ten or twenty minutes, according to the profusion of the discharge, each dose of which may be given in about half a wineglass of water, sweetened with loaf sugar. Or, the Oils of Fleabane, or Fireweed may be used, as named above. Sometimes a flooding will take place, or continue for a number of days after there has been a cessation of the abortion, or an expulsion of the contents of the womb; this is owing to the fact that a part of the membranes, or after-birth have been retained; a physician should remove them, as stated above, by a small blunt hook.

The abortion having been completed, a course similar to that pursued after natural labor should be instituted; the abdomen should be properly supported by a bandage, and the female should be kept quiet, and in a recumbent position for some days. If she be very much debilitated from the floodings, adopt the same course as to diet, &c., as named in floodings, following labor proper. Means should also be taken to strengthen the womb, and to remove any disease under which the female may be laboring,

in order to prevent subsequent abortions. (See King's American Electric Obstetrics.)

LABOR, OR DELIVERY.

LABOR, Delivery, or Parturition, is that process by which the womb, at full term, expels its contents, consisting of the child, after-birth, membranes, and fluids. Nine calendar months and seven days constitute "full term;" some authors say about two hundred and eighty days from the last menstruation, and others say about one hundred and forty days after life or motion of the child has been distinctly felt. It may occur within a few days previous or subsequent to this time, and in some cases has not come on until some weeks afterward. The process of labor is accomplished by the contractions of the womb, assisted in the latter stage by contractions of the muscles of the abdomen, which being accompanied with pain, are therefore termed "labor-pains." The period occupied in the process, varies considerably; but on an average, it continues from three to six hours; and more children are born between sunset and sunrise, than through the day, in the proportion of ten to seven.

The symptoms of approaching labor are, a settling down of the womb, which relieves the female very much, causing her to have a lighter feeling, to breathe more freely, to be in better spirits, and to move more actively than for some two or three months before. Not unfrequently, there will be a constant desire to evacuate the bowels or bladder. A flow of bloody mucus also takes place in most instances, called "the show;" and flying pains in the back and loins, wakefulness, nervous excitability, &c., are apt to be present. Sometimes, owing to costiveness, great weariness, rheumatism, &c., a kind of pain will be felt in the latter weeks of pregnancy, which are termed "*false pains*," and which may be determined from "*true pains*," by observing that the latter commonly begin in the back, and spread around to the belly, in the region of the womb, that they come on regularly, with intervals of freedom from pain, and that they acquire more severity, as well as frequency, with the advance of the labor; if during their presence pressure with the hand be made upon the belly so as to feel the womb, this organ will be felt firm, hard, and contracting, somewhat like a hard tumor, becoming soft as the pain ceases.

False pains begin at the upper part of the womb, are seldom felt in the back, do not extend so greatly around the lower part of the body as the true pains, are either on all the time, or appear with great irregularity, and do not cause the womb to become firm and hard. They are usually very annoying, and may be relieved by a purgative injection, or a laxative internally, aided by the subsequent administration of an infusion of Sculleap; or, a dose or two of the Compound Powder of Ipecacuanha and Opium, or the Compound Tincture of Virginia Snakeroot may be given.

Labor is divided into four varieties, viz:—

1. *Natural Labor*, in which the child's head presents so as to be the first part born, and where the process of expulsion does not exceed twenty-four hours, being accomplished by the unaided efforts of nature, or with the aid ordinarily bestowed.

2. *Protracted, Tedious, or Difficult Labor*, the same as the preceding, with the exception that the process of expulsion extends beyond twenty-four hours, and may need some kind of artificial aid before it can be completed, as turning, &c., by the hand, or, the use of Ergot, &c., or, the application of instruments.

4. *Preternatural Labor*, in which any part of the child presents at the mouth of the womb, except the head; where the cord, or navel-string falls down so as to show itself on the outside when "the waters break;" and where there are two or more children.

4. *Complicated Labor*, in which some dangerous symptoms occur, not necessarily belonging to the labor, as convulsions, severe flooding, &c.

Natural labor is divided into three stages. The *first stage* occupies from the beginning of labor, until the mouth of the womb has become thoroughly dilated or opened, which is generally known by the rupturing of the membranes and discharging of "the waters," or amniotic liquid. During this stage the female is very apt to be uneasy and restless, peevish and fretful, and sometimes quite low-spirited; she frequently experiences flashes of cold and heat, and the desire to evacuate the bladder is more frequent than ordinarily. Sometimes, and more especially toward the latter part of this stage, there will be vomiting; or, each pain may be ushered in by a slight shivering. The pains are of a "grinding, cutting, or sawing" character; they occur with regularity, gradually become stronger and more continuous, with intervals of ten or fifteen minutes between them, in which the female is comparatively easy. These pains may be occasionally benefited by firm pressure over the small of the back, which should always be done by the friends of the woman *and not by the physician*, who must avoid wearying or exhausting his strength in the earlier part of the labor, lest he thereby incapacitate himself from rendering necessary and more valuable assistance, should it be demanded in the latter stage of the delivery.

Unless there be flooding, or some untoward symptom, during the first stage of labor, the female need not be confined to one posture; but she should not make violent motions of the body, and, above all, she should not bear down in this stage; any efforts of this kind are improper. The condition of the bowels must be noticed, and if they have not been evacuated, an injection should be given. It should also be observed that the urine is passed regularly. The room must be kept cool and cheerful, and the presence of more than one or two females, beside the physician, is unnecessary. Too much gossiping, or the administration of cordials or stimulants are injurious. When the pains are regular and pretty frequent, the physician will desire to make an examination to ascertain the condition of the parts and the progress of the labor, which is very proper, as it may eventually save the patient much suffering, and, in some instances, even her life; but there is no necessity for frequent examinations.

Every thing having been found correct, the female's bed should be properly prepared; it should be a cot, or hard mattress,—a feather bed should not be used, as it is, to say the least of it, very unhandy. Upon the mattress a folded blanket, dressed skin, or oil-cloth must be placed, to prevent its becoming soiled by the discharges, and over the whole a sheet may be thrown for the patient to lie upon; the rest of the bedclothing may be put on in the ordinary way. The female's dress should be light and simple, so as not to over-heat her, or be in the way of assistance should it be required. The scissors, ligatures for tying the cord or navel string, bandage for the woman, &c., must now be secured, and placed where they can readily be had. The female may, if she desire it, use a light diet, consisting of toast and tea, toast-water, thin Indian meal gruel, cold water, &c., but animal food, and all stimulants must be prohibited. As some time may pass before the second stage arrives, it will be proper for the physician to occasionally leave the room for a few minutes, that the woman may have an opportunity of evacuating the bladder or bowels.

The *second stage of labor* occupies the period between the discharge of "the waters," or the complete dilatation of the mouth of the womb, until, and including the birth of the child. After the first stage has terminated, the female usually has a short interval of freedom from pain, and some have several hours of repose, before the second stage commences. The pains in this stage are different from those of the preceding, being of a forcing down or expulsive character, and the advance of the child is aided by the muscles of the abdomen. In this stage the female should not be allowed to leave her bed on any account, lest the child be suddenly expelled and destroyed before the physician can bestow the necessary attention; and which may cause an inversion of the womb, or subject the woman to dangerous flooding. There will frequently be a desire to stool, but this will cease after the head is born. The position assumed by the female in this stage, varies in different countries, the most common is, to have her lie on the left side with the knees well drawn up toward the abdomen, or, to lie upon her back; I prefer the latter.

When the pains are on, there will generally be sufficient bearing down without any effort on the part of the patient, but if they are weak, or of short duration, she may assist the delivery by bearing down only when the pains are present. The physician will be constantly by the bedside to give the necessary support to the parts, and as the head of the child advances, he will ascertain whether the cord is around its neck, that he may at once remove it.

As soon as born, the child cries vigorously; but should it make no noise, a finger may be introduced into its mouth to remove any mucus or other substance which may interfere with its breathing. A few minutes after delivery of the child, the pulsation in the cord will cease to beat, when it may be tied with a strong ligature in two places, the first being about an inch and a half from the child's body, and the other about an inch from the first ligature, and then, by means of a sharp pair of scissors, separate the cord between these two ligatures. The child may then be removed from the mother, and given into the care of the nurse.

After the delivery of the child, the female experiences much relief, and feels more comfortable and cheerful, usually having an entire freedom from pain for a few minutes, or even an hour, when the *third stage* commences, in which the after-birth, or placenta and membranes are expelled. Slight pains are felt, and with one, two, or three, the after-birth is expelled. Sometimes the child and the after-birth are delivered with the same pain. No rash or strong pulling must be attempted to remove the after-birth, provided it does not pass away soon after the delivery of the child; if there be much delay in its expulsion, the physician in attendance will give the proper aid. I state this, because no one but a well-educated physician should ever be allowed to attend a case of labor; ignorant persons may attend many natural cases without doing much injury to the female, but in instances where skill and address is required, they will be almost certain to lose their patients.

After the delivery of the after-birth, the bandage should be applied around the body sufficiently tight to give support to the relaxed abdomen, and this should always be done by the nurse,—never by the physician; he should, however, ascertain whether it is properly adjusted, after its application, and when the female is properly covered. The female should now, or as soon as her strength and condition will permit, be carefully removed to the bed which she is to occupy for the next ten or twelve days; cloths must be loosely placed to the genital parts to receive the

blood and other discharges, that they may not soil the patient's garments. And, for a few days, she should on no consideration be allowed to sit up in bed, or to rise; it has frequently happened that a momentary sitting posture at this period, has caused sudden death, or a most alarming flooding.

The other varieties of labor, viz: *difficult*, *preternatural*, and *complicated*, occur so seldom when compared with natural labors, that it will be unnecessary to make any remarks concerning them, as they should always be attended to by a medical man only. Those, however, who desire a full explanation of the symptoms and treatment of labor in its various forms, will find a very detailed account in a work lately published by the author, entitled "American Eclectic Obstetrics."

TREATMENT AFTER DELIVERY.

THE discharge from the womb, which continues for several days after delivery, is termed *lochia*, or *lochial discharge*. Its amounts varies with different women, being very slight with one class, and very profuse with another, so as to soil twelve or eighteen cloths in the course of twenty-four hours. Its amount gradually lessens until it ceases entirely, and it changes from a bloody to a greenish color, or almost colorless. No treatment is required for the lochia, unless it is very excessive, or very much diminished in quantity. When it is *excessive*, enfeebling the patient, astringents may be given to lessen it, as infusions of Geranium, White Oak bark, Witch Hazel bark, &c.; or two grain doses of a mixture of a scruple, each, of Caulophyllin and Geraniin, may be given every hour. It will also be proper to bathe the parts with cool water, four or five times a day. When the augmented discharge is caused by retained pieces of the after-birth within the womb, the above astringent infusions may be injected into the vagina. For any debility occasioned by the discharge, tonics must be administered, as Sulphate of Quinia, Citrate of Iron and Quinia, Gentian, &c., with a nutritious, easily digested, but non-stimulating diet; a state of quiet in the recumbent position is very necessary. In profuse lochial discharges, Ergot, Caulophyllin, Oil of Fireweed, Oil of Fleabane, Tincture of Cinnamon, Geraniin, Warren's Styptic Balsam, &c., are among the articles that may be efficaciously administered.

When the lochia is less than it should be, or ceases too soon, it is commonly owing to cold, and if it be not promptly reinstated, it may cause a serious result. The bowels should be opened by a gentle cathartic, and then a strong infusion of Motherwort should be administered. This should be drank as hot as possible, and the patient should use it plentifully. The legs and inside of the thighs, should also be bathed with some stimulating compound, as the Compound Tincture of Camphor. If febrile symptoms and pain are present, warm fomentations of Hops and Tansy should be applied to the abdomen; and, internally, the Compound Powder of Ipecacuanha and Opium, may be given; or eight drops in a teaspoonful of water, and repeated every hour or two, of a mixture composed of two parts of Tincture of Black Cohosh, and one part of Tincture of Aconite root.

After-pains are frequently very distressing, and require means for relief. That which I have found the most efficient in severe cases, is the application over the abdomen of a fomentation of equal parts of Hops and Tansy digested in some Whisky, or other spirits, which should be renewed two or three times a day; together with the administration of a mixture of Cau-

lophyllin two and a half grains, Compound Powder of Ipecacuanha and Opium five grains, repeating this dose every three hours, until relief is afforded. In some cases, I have met with success from a powder composed of Ergot three grains, Camphor and Opium, each, half a grain; repeating this dose as often as required. Ordinarily, the Compound Powder of Ipecacuanha and Opium will relieve after-pains. Care must be taken that the pains experienced are after-pains, and not some more serious disease, as inflammation of the peritoneum.

Milk-fever may commonly be prevented by putting the child to the breast as soon as possible after it has been washed and dressed, if the state of the mother will permit; and by giving a purgative within twelve or twenty-four hours after delivery. If the symptoms are severe, one or two Seidlitz powders, warm fomentations upon the breasts, should they be painful and distended, together with frequent evacuations of the breast-milk by the child, or otherwise, will overcome them. In some instances, the administration of the Compound Powder of Ipecacuanha and Opium, will be useful.

Few nursing females escape one or more attacks of *ulcerated* or *excoriated* nipples; and some are subject to it every time they give suck. Frequently when the child sucks, the pain is severe, and more or less blood flows from the part. Sometimes painful ulcers, or deep fissures are present, and in a few instances the nipple is lost. The artificial teats sold in the drug stores, will remove or prevent this difficulty, when the child will draw through them; but it will often decline their use, when other means must be employed. The first thing is to reduce any inflammation which may be present; and which may be accomplished by a poultice of Elm bark, or Elm and Hops, Elm and powdered Lobelia, &c., which should be made large enough to extend over the nipples, and for some distance around it. Occasionally, the severity of the inflammation will be such that two or three leeches will be necessary before the poultice will be of any advantage; the leeches may be placed on that part of the breast just beyond the areola or colored circle which surrounds the base of the nipple. Sometimes the pain and inflammation may be subdued by washing the nipple three or four times a day with a solution of four or five grains of Nitrate of Silver in a fluid-ounce of distilled water.

After the severe inflammation of the part has subsided, one of the subsequent compounds will perfect the cure:—Take of Mutton Tallow half an ounce, Balsam of Peru one drachm, Glycerine, Honey, each, half a drachm; melt the suet, strain it, and then mix in the other ingredients. A little of this may be applied to the nipple four or five times a day. 2. Take of Balsam of Tolu, and Peru, and Honey, each, three and a half drachms, Opium, Camphor, each, half a drachm, Alcohol half a pint; mix, and let them stand a week, shaking them well every day. Moisten a soft piece of linen with this, and keep it upon the nipple during the intervals of nursing, occasionally removing it. Wash the nipple always with a little warm water before allowing the child to suck. It should smart a little, but if this be too severe, it must be diluted with water.

It is generally necessary that the female should be kept quiet and as free from physical or mental excitement as possible, for nine days at least, that the womb may gradually assume its original non-impregnated state, without attacks of flooding, or other derangements, as well as to permit the constitution to regain its former strength and vigor. She should not be allowed to arise at all, for any purpose whatever, until after the third or fourth day, particularly if she has had a tedious or otherwise debilitating labor; and when it is permitted her to get up, she may at first be bolstered up in bed

for a few minutes, in a sitting posture, then in a chair, and so on, gradually prolonging the time, until she need not occupy the bed any longer through the day. The apartment should be kept free from filth and disagreeable smells, maintaining a comfortable degree of warmth, and being very careful to prevent her from "catching cold." Her person should be kept in a state of cleanliness, particularly about the organs of generation, bathing them once a day with warm water, to which a little spirits has been added. A light, easily digestible diet should be allowed, particularly for the first six or seven days, as toast and tea, oat-meal or Indian-meal gruel, boiled rice, arrowroot, &c., when, if every thing is progressing favorably, her food may be more nutritious, as soups, broths, soft-boiled eggs, tender chickens, &c. And thus must she gradually have her ordinary diet restored. Ale and porter may be used after the tenth or twelfth day, if she continue to be feeble. If she is subject to falling of the womb, it will be better for her to keep in the horizontal position for two or three months after delivery, in order to aid in effecting a permanent cure.

FLOODING.

FLOODING, or Hemorrhage from the Womb, is one of the most dangerous symptoms which may come on during labor. Its appearance is generally sudden and unexpected, requiring an immediate and vigorous management, and demanding, on the part of the physician, calmness, presence of mind, firmness, and a perfect knowledge of all the means for successful treatment that are known to the profession. There are no symptoms by which a physician can determine whether flooding will accompany a labor or not; it may come on in the midst of what appears to be a favorable labor, and that so formidably as to destroy the female in a few minutes, if her physician be ignorant or tardy in using the proper measures. Hence the necessity for well-educated midwives, to lessen the chances for mortality among females in labor, as well as among their infants.

Flooding may occur from various causes, but it is more commonly met with after the child has been born, while the after-birth still remains in the womb, and also after the expulsion of the after-birth. When it occurs shortly after the delivery of the child, the after-birth remaining in the womb, it is generally owing to a partial loosening of the after-birth from the inner surface of the womb, whereby large bleeding orifices are exposed, and sometimes makes its attack with suddenness and alarming profuseness. The face of the patient becomes pale, the pulse weak and frequent; she becomes, in a very short space of time, not merely faint, but perfectly unconscious of everything that is going on around her; she neither sees nor hears anything. If immediate benefit be not afforded, she will rapidly succumb. If the hand be applied upon the belly, instead of feeling the hard, contracted womb, through its walls, it will be felt soft and lax, or perhaps, will not be distinguished from the other contents of the abdomen.

TREATMENT. This must only be attempted by an educated physician, who, instead of trifling with his patient's life by giving medicines and applying cold fluids to the parts, or by pulling upon the cord to remove the after-birth in this way, will at once tightly bandage the female around the abdomen, placing a compress underneath the bandage and over that part of the belly directly opposite the upper portion of the womb, in order that it may press firmly upon that part. Then, taking off his coat and turning up his shirt sleeves, he will put the cord upon the stretch with one hand, while he

will pass the other, usually the right hand, quickly along the cord as a guide, and into the womb, carrying it on until he reaches the after-birth; if the mouth of the womb be contracted, he must dilate it with his fingers sufficiently to admit the hand. When the after-birth is reached, he will place the outside hand on the abdomen to sustain and fix the womb, and then with the other hand will carefully separate the after-birth from the womb, with the pulps of his fingers, commencing at its edges, and pressing or peeling it off from the surface of the womb, as though he were removing the peel from an orange, being very careful not to scratch the womb with his finger nails. As soon as he has loosened the after-birth, the womb usually contracts and discharges both it and the hand; or, if this is not the case, the hand must not be removed until contractions of the organ have been aroused, which will expel it. After the after-birth has been thus removed, the management of the case must be pursued with great care, that the flooding may not return, and to prevent inflammation. The strength of the patient must be supported by the means named at the end of this article. In these cases, the life of the female will be saved or destroyed in a few minutes—the measures named must be quickly and energetically pursued—and if the physician lose his self-possession, or become appalled at the copious flow of blood, he should not perform the operation, lest he still further endanger his patient's life by a careless or awkward management,—but he should send at once for another physician.

The other division of flooding occurs shortly after the expulsion of the after-birth; it is a very serious accident depending upon a want of tone or action of the womb, and often proves fatal. It is not the amount of blood lost that is to be feared, so much as the effects upon the system. This form of flooding may occur as soon as the after-birth has been delivered, and in cases where no untoward symptom has thus far been manifested during the labor, or, it may not come on again until half an hour, an hour, or several hours have passed. Its attack is apt to be sudden, the patient complains of great faintness, of a feeling of weight about the stomach; the face becomes pale, the breathing short and quick, the pulse is small, weak, and rapid, perhaps hardly observable at the wrist, there is a dimness of vision, and finally a complete loss of sight and hearing, or an unconscious condition. Drops of cold sweat will form upon the brow, and the feet and legs become deathly cold. In this form of flooding a large amount of blood may pass externally and stain the cloths and bedclothes, or, if there be an obstruction to its external discharge, but a small quantity may be visible, while the internal loss of blood, filling up the womb, is very profuse. If the patient should survive the first copious discharge of blood, she will slowly recover from her state of unconsciousness, the pulse becomes fuller and more natural, the system somewhat recovers its strength, the feet and legs grow warmer, breathing is performed with greater ease, the cheeks become slightly flushed, and consciousness returns. She now exhibits much restlessness, tossing about, crying for fresh air, and desiring to be fanned, and frequently making such exclamations as, "Oh, I shall die," &c.

This reaction of the system, however, soon passes away, another gush of blood takes place which may prove fatal, or she may lapse into a state of unconsciousness, from which she again recruits, and thus continue for several attacks, until eventually death closes the scene. As in the preceding form of flooding the hand placed upon the belly will find the womb soft and lax, and upon pressing it a gurgling sound will be produced, together with a gush of blood from the parts either in clots or fluid.

TREATMENT. This flooding depends upon a non-contractile state of the womb, whereby the mouths or openings of its bloodvessels instead of being closed, remain open and exposed; the safety of the female, therefore, rests wholly upon the production of contraction in the womb, which, when established, will close the mouths of the bleeding vessels and check the flooding. The physician must proceed with steadiness and energy. And the bystanders must not perplex him with questions of any kind, nor interfere with his movements, but should promptly and actively obey all his requests; for this is the most trying situation in which a physician can be placed, one calculated to unnerve him, requiring all his fortitude and energy to combat. He should be cheerfully seconded in all his efforts.

The physician, placing his hand upon the bowels, will press firmly upon the womb, keeping up this pressure steadily until the womb contracts, and also seizing the womb, through the walls of the abdomen, between the fingers, working and pressing it from time to time, alternately. If several hours of compression are necessary, other parties may assist him. This will answer a much better purpose in arousing the womb to action than a bandage, and will also keep it free from much clotted blood. This course may cause some pain, and the patient may beg to have it stopped, but to this no attention should be paid, and the exertions should continue unremittingly, until the contraction of the organ, and consequent cessation of the flooding has ensued. Be careful, however, not to press or work the womb so violently as to turn it inside out. As soon as the flooding becomes checked, the womb becoming firmer, harder, and contracted, a bandage may be placed around the abdomen, with a sufficiently thick compress between it and the belly, so as to continue a steady, firm pressure upon the womb.

While the pressure and working is being accomplished, as above, an assistant should apply cold to the parts, thus: plunge a large napkin in a basin of cold water, and dash it suddenly against the external parts, the inside of the thighs, the buttocks, &c., repeating it every minute or two; or, cold water, cold water and vinegar, &c., should be poured from a height of four or five feet upon the naked abdomen. And these means should be continued without cessation, until the shocks thus occasioned, have aroused the womb into action. One thing, however, must be borne in mind, if the system be very much prostrated, some judgment must be displayed in the use of these external refrigerants, as a too free employment of them may produce evil instead of good consequences.

Hemastasis, or ligatures around the thighs should be one of the very first means called into requisition, as it lessens the amount of venous blood thrown into the body, and thus aids in lessening the loss of blood.

Internally, the Tincture of Cinnamon should be administered in doses of a teaspoonful in about half a wineglass of sweetened water, repeating it every five or fifteen minutes, or at longer intervals, depending upon the copiousness and constitutional effects of the flooding. Other agents have also been found efficacious when used in connexion with the preceding measures, as, Calcined Deer's Horn, which is to be given in teaspoonful doses, added to about a wineglassful of hot water, repeating it in the same manner as the preceding tincture; this has arrested the flooding when other means had proved useless. A mixture of equal parts of Tincture of Rhatany, Tincture of Cinnamon, and Spirits of Turpentine, in half-teaspoonful doses, has likewise been of advantage; it may be given in an infusion of Geranium, or Beth root. Galvanic, and electro-magnetic currents passed through the womb, have been recommended by the highest authority.

Alum water may be given, when no other agent is directly at hand, in doses of a wineglassful.

When the constitution has become very much exhausted and prostrated from the great loss of blood, the vital powers must be invigorated and supported by stimulating agents; Brandy or other Spirits, Carbonate of Ammonia, Wine, Ether, &c., may be exhibited, continuing their use until they have effected a marked and favorable influence on the constitution, as indicated by a more natural pulse, an increased temperature of the feet and legs, a return of color to the lips, and greater mental and physical sensibility. It will be found better to give the liquors in table-spoonful doses, without any water, repeating them every twenty or thirty minutes, or even oftener, if the prostrated condition of the vital forces are such as to require it.

As soon as the flooding has been arrested, a bandage should be carefully placed around the body, with a compress, as stated above, and it should be closely attended to, noticing every half-hour or hour, that it has not slipped, but continues in the position in which it was placed at first; for there may be a continued disposition to laxity and inactivity of the womb, and a consequent return of the flooding, so that the female will not be out of danger for a number of hours. The ligatures on the limbs may be slackened, but they must not be taken off until the woman is under no further danger from the flooding. She must be kept perfectly quiet and still, and be positively prohibited from even moving for several hours after the cessation of the flow; and many days should pass before she be permitted to raise in a sitting position; the time in these cases, depending upon the degree of injury undergone by the system. The wakefulness and irritable condition of the system, remaining after a severe flooding, may be overcome by five or six grain doses of the following powder, repeated every two or three hours:—Take equal parts of the Compound Powder of Ipecacuanha and Opium, and Capsicum; mix. If the patient sleeps, do not awaken her, unless symptoms of flooding come on, as suspected by the bloodless appearance of the face, and indistinct, rapid pulse. The room should be kept dark, not too warm, and fresh air should be admitted, being careful not to have it pass over or upon the patient, so as to occasion a cold or fever. Visitors, whisperings or loud talking, &c., must on no account be allowed; the patient should be kept still, free from noise, and not allowed to talk or make the least exertion. At first, the diet should consist of light, nutritious fluids, as cold gruel, cold boiled milk, chicken broth, arrowroot, beef tea, custard, calf's foot jelly, &c., and when the debility and exhaustion is very great, stimulants may be added to these, as wine or brandy.

MILK LEG.

MILK LEG, or more properly, Phlegmasia Dolens, is a swelling of the legs, which sometimes attacks females shortly after confinement, being attended with more or less pain. The name *milk leg* was applied to it from an erroneous impression that it was due to the milk from the breasts finding its way into the legs. The nature of the disease is not yet satisfactorily understood, and many hypotheses have been advanced concerning it. Some have looked upon it as an inflammation of the absorbents, others, as an inflammation of the veins, and a third party have considered the blood as the seat of the disease. My own opinion is, that the lymphatics are at first affected, and the inflammation of the veins occurs as a secondary con-

sequence. And the disposition to an attack, may very likely be strengthened by some mal-condition of the blood. Scrofulous females, and those subject to rheumatism, cancer, &c., are more subject to an attack of this affection, in whom it may be brought on by exposures to cold, compression of the nerves and veins of the pelvis, disease of the womb, injuries, &c.

SYMPTOMS. Phlegmasia Dolens seldom appears before the fifth or sixth day of confinement, and sometimes three or four weeks will elapse before it makes the attack. A heavy, dull pain in the lower part of the bowels, groin, or upper part of the thigh, is first complained of, with a weak, low-spirited, or peevish state of mind and body, and some febrile or inflammatory symptoms. Sometimes there are no preceding symptoms, the disease being ushered in suddenly, with violent chills, succeeded by more or less heat, and accompanied with a more or less severe pain in the neighborhood of the thigh. The pain is more violent when the thigh is extended, and the easiest position for the limb is a state of semiflexion; the least motion or pressure aggravates the pain. In the course of a day or two, the pain diminishes, and the limb commences swelling, first at the groin, and thence gradually downwards. The inside and front part of the limb are those which are most apt to swell. Very frequently, the swelling attacks the calf of the leg first, and then advances upward; in this case, the calf will be hard, swollen, and very painful. The skin becomes of a dead white, smooth and glossy, hard, very painful on being touched, and the diseased limb is much hotter than the other, and feels stiff and heavy. Pressure does not leave a pit as in dropsical swellings, except on those parts in which there is no pain, and at the close of the acute symptoms. The patient soon becomes unable to move her leg, from absolute want of power. In connection with this, the whole system suffers with considerable fever, as small and rapid pulse, great thirst, sleeplessness, &c. The disease seldom attacks both limbs at the same time, but it is often the case that as one limb recovers, the other becomes affected, or the arm of the same side will become swollen and painful. Most commonly the breasts become flaccid, and the lochia disappears.

The acute stage may continue from five or six days to as many weeks, terminating in a restoration of the limb to its natural size, freedom from pain, and a capability of using it the same as before. Frequently, however, the disease assumes a chronic form, in which the leg continues swollen and almost useless for the remainder of life. Occasionally, it terminates in the formation of abscesses, which, from the great drain upon the system, ultimately prove fatal.

The disease may be *distinguished* by its coming on within a certain time after confinement; by the pain along the front or inside of the leg; the feverish symptoms; the elastic character of the swelling; the glossy, white appearance of the skin; the powerlessness of the limb; the pain produced by compressing the calf of the leg, or by slightly rotating the thigh in its socket. The left leg is more generally affected.

It is a tedious disease, and of difficult cure, though rarely immediately fatal. When the pain slowly lessens, with a slight numbness of the limb, the swelling becoming softer and pitting upon pressure, and the febrile symptoms diminishing, the case is about to terminate favorably.

TREATMENT. The first indication is to subdue the inflammation; the second to bring about an absorption of effused fluids, and establish a healthy condition of the veins.

If the bowels are not already loose, they should be purged freely; for

which purpose the Compound Powder of Jalap, with ten or fifteen grains of Cream of Tartar to each dose, should be given, repeating it every two or three days during the inflammatory stage. The bowels should likewise be kept free, producing one evacuation daily, by a use of the infusion of Leptandra and Blue Flag, named under Typhoid Fever.

To subdue the pain and inflammation, half-teaspoonful or teaspoonful doses of the Compound Tincture of Colchicum may be given, every one, two, or four hours, owing to the intensity of the symptoms, and the action of the medicine. From three, to six or eight drops of the Tincture of Aconite root, added to each dose of the above, will frequently aid materially in overcoming the more severe symptoms. In some cases a mixture of Tincture of Gelsemium thirty drops, with Tincture of Aconite five or six drops, may be given for a dose, substituting it for the preceding remedy, and repeating it every hour or two. When the patient is peevish, wakeful, and very uneasy, Sulphate of Morphia may be given as often as necessary, in doses of one-fourth or one-half of a grain.

Non-stimulating diuretics are very useful, and should be freely given to the patient, as, a cold infusion of Haircap moss, or of Elder blows, or of Cleavers; or, these may be combined.

Applications to the diseased limb must not be omitted. A warm infusion of equal parts of Hops, Lobelia, and Stramonium leaves, may be applied to the whole limb, enveloping it in flannel moistened with the infusion, and renewing it as soon as cool. Or, an infusion of Hops in Vinegar, or a strong infusion of Water-pepper may be similarly used. Sometimes cold applications will answer a better purpose than warm ones. When fresh Stramonium leaves can be had, bruised, moistened with hot water, and placed over the whole limb, they will be found to exert an almost immediately beneficial influence. Some physicians have derived great advantage from cups or leeches applied in the direction of the pain; and others have found happy results to follow the application of a blister, or Mustard poultices to the groin of the diseased leg. The diet and regimen of the patient should be the same as in Inflammatory Diseases generally, which see.

In the *second* or *chronic* stage of the disease, the bowels must be kept regular, and the Compound Tincture of Colchicum be administered three or four times a day, together with a continuation of the diuretics. The Tincture of Arnica has been found effectual after the subsidence of the more active inflammatory symptoms, in doses of from twenty to sixty drops repeated every three or four hours.

In this stage a bandage may be applied around the limb, enveloping it from the toes to the groin, but it should not be uncomfortably tight. It must be reapplied whenever it becomes loose; and at these times, some stimulating mixture as the Compound Tincture of Camphor may be applied along the limb with considerable friction; or, the bandage may be kept constantly moistened with the same.

In the more advanced chronic stages alteratives should be used, as, the Compound Syrup of Stillingia, with Iodide of Potassium; Iodine pill; or other alterative. The limb may also be subjected to the action of electro-magnetism. A Compound Tar plaster over the lower part of the spinal column, will be of immense service. In both the acute and chronic stages the limb should be kept in a horizontal position, not allowing it to hang down.

The diet in the chronic stage should be nutritious and digestible, and

when debility is present, tonics, or mild stimulating liquors may be used, as ale, porter, wine, &c., or Peruvian bark in wine. When ulcers occur, treat the same as directed under Ulcers.

NURSING SORE MOUTH.

WOMEN who give suck, or who have advanced to the latter months of pregnancy, are sometimes affected with a sore mouth peculiar to themselves, other females and men being exempt from it. It is commonly termed the *sore mouth of nursing women*. The most robust constitution, or the sickly and delicate, are indiscriminately attacked by it; those, however, of costive habits, dyspeptic symptoms, and hepatic affections, seem to be more liable to its attacks than others. It also attacks those disposed to consumption, erysipelas, or whose systems have been impaired by the employment of mercurials. The children are generally healthy and robust, except in the last stages when the secretion of milk diminishes.

SYMPTOMS. The disease generally comes on suddenly, the first symptom being a severe scalding sensation of the tongue, with pain, at times intense. The tongue and roof of the mouth, is of a pink color, especially in the severer instances, and there is a profuse watery discharge from the mouth, extremely hot, so much so as to give a scalding sensation to the face when passing over it. Any food or drink taken into the mouth occasions more or less intense pain. After a few days, slight ulcerations on the tongue, as well as about the throat, manifest themselves, and this with the scalding, flow of saliva, pain, &c., will continue until the child is weaned, or the patient has been cured. The bowels are generally costive. When the disease extends into the bowels, diarrhea ensues, and the case is much more dangerous. It is a singular disease, nearly always disappearing upon weaning the child; yet weaning is not always necessary, nor is it at all desirable, as there is always a greater disposition to a return of the disease at every future delivery than in those cases where proper treatment has effected a cure, and restored the constitution to its usual healthy condition. The disease has terminated in death in three, four, or six weeks after the birth of the child; sometimes it will not prove fatal until after it has occurred several times.

TREATMENT. In severe cases, if the strength or condition of the patient will admit, an emetic must be administered and repeated twice every week, continuing it as long as the symptoms of the case, and the obstinately torpid state of the liver require; I prefer the Compound Powder of Lobelia. After the effects of the emetic have subsided, a cathartic must be given, as the Compound Powder of Jalap, Compound Powder of Leptandrin, or Compound Pills of Leptandrin, a sufficient dose of which must be repeated every day or two. When diarrhea is present, omit the physic. Internally, the Tincture of Muriate of Iron, may be given in doses of ten or twenty drops in about a gill of an infusion of Queen of the Meadow root, or other diuretic, repeating it every two or three hours. And should there be any derangement of the kidneys, with scanty, high-colored, and scalding urine, diuretics will be beneficial, as an infusion of Haircap moss, Cleavers, Marshmallow, &c. Sometimes Canada Balsam will be found advantageous.

The soreness of the mouth and throat may be relieved by applying to them once a day, a wash composed of Nitrate of Silver from forty to eighty grains, dissolved in a fluidounce of distilled water. The best period for

its application will be just previous to retiring to bed, in order that the patient may procure sleep.

Through the day, the mouth as well as the throat should be washed or gargled, several times, with one of the following astringent mixtures, a teaspoonful or so of which may be occasionally swallowed with advantage:—Take of Geranium, Blue Cohosh, Golden Seal, Solomon's Seal, each, half an ounce; mix and make one pint of a very strong infusion, to which, when strained, add powdered Borax two drachms, Honey a gill. Or, take of Geranium, Marshmallow, Rosemary, Golden Seal, and Wild Indigo root, each, one ounce. Prepare the same as the previous infusion.

The body should be bathed daily with an alkaline solution rendered stimulating by the addition of Alcohol or Whisky; and as soon after the delivery as may be prudent, the Spirit vapor bath should be administered once or twice a week, if the condition of the patient will admit. The diet should be nutritious and readily digestible; and must not be of a greasy nature, coarse, liable to occasion flatulency, or sour stomach, or in any way obstruct or impair the functions of the stomach or liver. Liquors are not to be used, unless in cases of much debility, when wine may be allowed. It is always advisable to cure this affection, if possible, without weaning the child, as the female is thereby rendered less liable to its recurrence at another parturient period; but, if the symptoms continue to increase, and the strength of the patient to fail, with violent diarrhea, weaning may become absolutely necessary in order to save the patient's life.

INFLAMMATION OF THE BREAST.

INFLAMMATION of the Breast, or Ague in the Breast, as it is sometimes popularly called, is an affection frequently met with among nursing women, and which may take place at any period during suckling. It is generally caused by cold, though it may be occasioned by permitting the breasts to become distended with milk, as in sore nipples, or among those mothers who remain long at parties, balls, theaters, &c., leaving their infants at home. It may also follow improper pressure on the breasts, mechanical injuries, &c.

SYMPTOMS. The first indication is generally a chill, succeeded by more or less feverish symptoms; slight darting pains are felt in the breast, which are more painful when this organ is compressed, and which increase in severity as the disease progresses; in severe cases the pain frequently extends to the arm-pit. At the same time the breast swells, becoming hard, unequal, and glossy, but retaining its color. Finally, the skin becomes dark-red, matter forms, the enlarged breast becomes considerably softer, with throbbing, and a sense of fluctuation. The severe pain renders the patient very fretful and irritable, especially when it is accompanied with a constant wakefulness, night-sweats, irregular chills, impaired appetite, debility, and emaciation. It is sometimes a very obstinate malady to cure.

TREATMENT. This must have in view to prevent the formation of matter if possible; but if the first three or four days have been allowed to pass without treatment, it will be a difficult thing to prevent suppuration. When matter commences to form we must use means to hasten its progress; in from nine to twelve days it is generally completed. For the first three or four days the breast should be bathed three times a day, with a stimulating liniment, as for instance, a combination of one ounce each of Camphor, Oil

of Sassafras, Oil of Cajeput, and Olive Oil. Immediately after this bathing, apply the following ointment:—Take of finely cut or shaved Castile Soap an ounce and a half, Lard one ounce, yellow Beeswax half an ounce; melt these ingredients together by a gentle heat, then take from the fire, and when nearly cool, add slowly eight fluidrachms of Jamaica Spirits in which thirty grains of Camphor have been dissolved. To apply it:—Cut a piece of linen in a circular form, of the size of the whole breast, leaving a hole in the center sufficiently large for the nipple to pass through. Then partially remelting this ointment, spread it on the linen. Apply it to the breast as warm as can be borne; in about every four or six hours, remove it from the breast, heat it again to make it soft, and reapply as before, having, every time, first bathed with the above liniment. The female should remain in bed, as still as possible, and the milk must be drawn from the breast frequently, by any one who can accomplish it. The ointment thus used will frequently check any further progress of the disease in the course of twenty-four hours. Any nervous excitability may be lessened by the administration of six or eight grains of the Compound Powder of Ipecacuanha and Opium, repeated every three or four hours. The bowels should be kept regular daily; and the infant should be fed by a spoon, or a wet nurse be engaged for a time. Should this fail, and matter form, the suppuration may be hastened by an Elm poultice, or a bread and milk poultice placed over the breast, and renewed frequently. Or, if it can be obtained, fresh Pokeroot may be roasted in hot ashes, until it is soft, then mashed, mixed with about an equal quantity of powdered Lobelia, and sufficient hot water added, which may be applied over the breast, renewing it three times a day. When the suppuration is completed, the severe pain will be materially diminished by permitting a physician to open the abscess with a probe or lancet, and thus give free egress to the matter. The ulcer may be treated upon the same principle as explained under Ulcers, which see. The diet and regimen must be the same as in the preceding inflammatory diseases; and great prostration of the system may be overcome with stimulating tonics, as red Peruvian Bark and Port Wine, or the Compound Wine of Comfrey.

PUERPERAL MANIA.

PUERPERAL Mania or Insanity, may occur both after abortion and delivery. It is generally sudden in its attack, and is apt to be accompanied with a suppression of the lochial discharge, secretion of milk, or both. It may be owing to irritation of the womb, or of the breasts, sudden cessation of the lochia, tedious or instrumental labor, powerful emotions of the mind, cold, &c. Sometimes its causes are very obscure.

Like ordinary mania, it may assume a raving character, or a melancholic, and the symptoms very much resemble those which are common to other forms of insanity. The premonitory symptoms are various, and usually so slight as to excite but little apprehension, as headache, excitability of the nervous system, loss of appetite, or an irregular appetite, constipation, restless nights, irascibility of temper, &c. And, like ordinary mania, it may continue for only a few hours, for several years, the mind becoming sane, or it may remain incurable during life. (See Mania, page 371.)

The more excitement or fury there is displayed, the more dangerous is the insanity. A violent and unmanageable insanity, with a frequent pulse, is apt to be much more fatal in its results when it comes on soon after confinement, than when it is manifested at a more distant period. Gooch says,

"Mania is more dangerous to life—Melancholia to reason." This latter form of insanity, the melancholic, is much more obstinate and permanent than the furious. When the female obtains sleep, without being much enfeebled, the pulse becoming more regular, and the bowels more open, the prognosis is favorable; but is very unfavorable when the bowels continue costive, the pulse frequent, and the system becomes weak and emaciated.

TREATMENT. The general treatment will be similar to that already named for ordinary mania, on page 373. The bowels must be kept regular, or as much so as possible, the surface of the body should be attended to, with the use of a tepid or cold douche to the head and along the spinal column, repeating it two or three times a day. Sometimes counter-irritation, as considerable friction, and stimulating preparations to the back and limbs, will be of much efficacy. At other times sedatives will be valuable, as the Tincture of Gelseminum; or the following mixture:—Take of Tincture of Gelseminum half a fluidounce, Tincture of Belladonna one fluidrachm, Sulphate of Quinine eight grains; mix. Of this, half a teaspoonful may be given, and repeated every hour or two, to keep up the narcotic influence of the preparation in a slight degree. Other medicines of a similar character will frequently be found valuable, as Tincture of Stramonium, Tincture of Hyoscyamus, Sulphate of Morphia, &c., in various combinations. The principal efforts should be to calm the mind and quiet nervous excitability by the production of sleep.

The apartment occupied by the patient should be kept somewhat darkened, and perfectly quiet. A good nurse should be engaged, one who has some experience in the management of insane persons; all weapons or things which might be used to injure or destroy, must be placed out of the way, as garters, towels, handkerchiefs, cutting instruments, &c., and the windows must be properly fastened. A nourishing diet is necessary, with stimulants in case of great debility or exhaustion. If she be pale and anemic, some preparation of Iron will be very advantageous. No person should be allowed to visit her, not even her child or husband, until the insanity has considerably abated; and even then, some care is required in allowing her to take the child in her own possession, as it might be maltreated, perhaps to a fatal extent, should a paroxysm of insanity suddenly seize upon her. As soon as the violence of the malady has become greatly lessened, the female should be allowed to take daily promenades and other gentle exercise in the open air.

NEURALGIA.*

SYMPTOMS. Neuralgia or Tic Douloureux is one of the most painful affections to which the human family is subject. It more commonly occurs in the nerves of the face, though it is met with in different parts of the head, in the breast, side, hip-joint, and other parts of the body and limbs. Its attack is usually sudden, and the paroxysm of pain varies in its duration. The pain is agonizing, lancinating, and shooting along the nerves like a shock of electricity, frequently feeling as if red-hot wires were thrust into the parts, and after the pain passes away, a numbness remains for some time. Sometimes, instead of attacking suddenly, it commences with a slight heat, or sense of itching, or numbness, which augments in severity more or less rapidly. The pain occurs from time to time, at longer or shorter inter-

* This disease should have been placed among Nervous Diseases.

vals, and is often produced by the most trifling causes. If not cured, the system suffers, and the patient eventually dies, worn out from the repeated shocks and nervous irritation.

CAUSES. The causes of this disease are not well understood, though there are strong reasons for supposing it to be in some way connected with derangement of the digestive organs, at least in the majority of cases.

DISCRIMINATION. Neuralgia may be distinguished from *rheumatism* by the intensity of the pain, its short continuance, and its liability to return on the slightest touch; in acute rheumatism there is fever, redness, heat in the part affected, and some swelling, all of which are absent in Neuralgia; in chronic rheumatism the pain is continuous, less severe, and often worse at night. From *toothache*, by the shortness of the paroxysm, the rapidity of its succession, and the frequent convulsive twitchings.

TREATMENT. The bowels must be kept regular by laxative doses of the powder of Rhubarb and Bicarbonate of Potassa, administered daily as stated under Chronic Diseases of the Liver; the skin must be bathed twice a week with an alkaline solution; and the kidneys must be kept in healthy condition by means of non-stimulating diuretics. The diet must be especially attended to, avoiding everything which will oppress the stomach, or cause acidity, flatulence, irritation, or constipation, or in any other way disagree with the patient.

When the disease is in the face a Compound Tar plaster must be placed on the head behind the ear of the affected side, and kept discharging for as long a period as the patient can bear,—reapplying it, after a short interval, should the cure not be permanent. If the pain is in any other part of the system, the plaster must be placed over those parts of the spinal column, which are sore, tender, or painful on pressure.

Internally, the following tincture may be given in doses of twenty drops, every two hours, in about a table-spoonful of water, continuing its daily use until the disease is cured:—Take of Sulphate of Quinia twenty grains, Elixir Vitriol one fluidrachm, dissolve the Quinia and add Tincture of Black Cohosh fourteen fluidrachms. Or, one of the following pills may be given, repeating it three times a day:—Take of Sulphate of Quinia, Prussiate of Iron, Alcoholic Extract of Black Cohosh, each, twenty-four grains; mix, and divide into twenty-four pills.

Many other agents have been recommended, as the external application over the affected part of Aconitine; Extract of Belladonna and Stramonium, both externally and internally; external use of Cyanuret of Potassium, Chloroform, &c.; but I have cured many severe cases by the above means. Those cases which cannot be cured by medicines, and which are owing to preternatural bony growths, affections of the brain, &c., may sometimes be relieved by a division of the affected nerve.

DISEASES OF CHILDREN.

MANY of the diseases to which children are subject, have been treated upon in previous pages of the work, and to these the reader is referred, understanding that in those diseases common to both adults and children, the treatment will be the same as laid down, the only exception being in the quantity of the doses of the medicines given. Thus, Scarlet Fever, Measles, Chicken Pox, Thrush, Ophthalmia, Cholera-Infantum, Infantile Remittent Fever, Colic, Rickets, Scald-head, Constipation, Catarrh, Hooping-Cough, Hydrocele, Inflammation of the Mouth, Milk Scall, Convulsions, &c., will be

found described on other pages, for which see Index. In the present place I shall briefly refer to a few difficulties more common to young infants, and their management.

ATTENTIONS AFTER BIRTH.

AFTER the expulsion of the after-birth the female is bandaged and "put to bed," as soon as possible, unless her fatigue or enfeebled condition require some rest before this is done. In the meantime, while the physician is attending to the state of the mother, the child is taken from its place of deposit, and if not too weak, is washed and clothed. Every part of the surface of the child's body and limbs should be first smeared with fresh lard, oil, or other unctuous matter, which will facilitate the removal of the creamy, suet-like substance with which its skin is coated at this time, and which is called "Vernix Caseosa." This being done, the child should then be carefully washed with lukewarm water and Castile soap; for if the above-mentioned creamy substance be not thoroughly cleansed from the skin in one or two washings, eight or ten hours apart from each other, it may occasion either chafings, or some disagreeable affection of the skin. During the process of washing, as well as in drying the surface, great care should be taken not to injure the skin of the infant. Some persons wash the child with cold water, but this is very improper, being often followed by fatal consequences, even among the most robust constitutions. An infant just born has left a place, the temperature of which is considerably above that of the atmosphere, and to create a new influence upon its system, by a sudden diminution of this temperature, must be followed by serious results; the shock would be almost too great for even an adult. Having dried the child, the cord, or navel-string, is to be attended to; a soft, fine, square slip of linen, greased with tallow, may be wrapped around it; or, a hole of sufficient size may be cut or burned in the center of the linen, through which the cord is passed; then laying the cord a little to the left side in order to prevent it from pressing upon the liver, another soft square of greased linen is placed upon it, and the whole is then secured by a bandage, surrounding the child's body. This bandage, called the "belly-band" by nurses, should not confine the belly too closely. Before dressing the cord, as above stated, should any drops of blood be observed to flow from it, it must have a new ligature applied just below the first. The cord is usually inspected by the nurse whenever she washes the child, until it comes off, which may happen in from three to ten or twelve days. The dress of the child, which is applied after having dressed the cord, should be adapted to the season, light and loose, so as to admit of a free play of the limbs.

If the condition of the mother will permit, the child, after its dressing, should be allowed to suck, for it will frequently happen that the milk will flow in abundance; but should it refuse the breast, or be able to obtain no milk upon sucking, it should not be fed for at least some three or four hours, unless it be very fretful, and then some fresh cow's milk to which about one-third part of water but no sugar has been added, will be all-sufficient, until the breast-milk flows, when no other food must be permitted.

The black substance collected in the bowels of the child before birth, is called "Meconium," and should be removed as soon as possible, else it will give rise to colicky pains, &c. The milk which is the first secreted in the breast after delivery, is superior to any medicine for purging away the meconium; if the child, from any cause, cannot obtain this milk within five or

six hours after its birth, a teaspoonful of Castor Oil, or two teaspoonfuls of Sweet Oil may be administered for this purpose. Never give molasses and water, nor that detestable mixture which some persons advise, urine and molasses. As before said, the infant's dress should be light, comfortably warm, and sufficiently loose for the limbs to be readily moved about; a high-necked dress should always be worn for the first two or three weeks, even in summer, and caps are useless and calculated to do harm. The diapers or napkins must be pliable and of an absorbing nature, and should never be allowed to dry upon the child and become rough and rigid with the salts left after the evaporation of the watery part of the urine, as they will thereby chafe the parts. Allowing the child to remain with a wet napkin about it, exposes it to distress and cold; and the repeated application of the same diaper without washing it, merely hanging it up to dry, is very apt to irritate and excoriate those parts of the infant over which it is placed. There can be but two reasons for this filthy practice,—laziness or poverty.

When the child does not pass urine within a reasonable time after birth, or the urine is quite deficient in quantity,—the urinary organs being perfect, not needing any surgical interference,—Garlics or Onions bruised and placed over the region of the bladder, will generally induce a copious discharge of urine; and this may be further promoted by the use of mild diuretic infusions, as of Marshmallow, Parsley root, Pumpkin seed, Watermelon seed, &c.

The mother's milk is the food naturally intended for the infant, and is decidedly the best; no other is required for at least six or eight months after birth, where a good supply of it is furnished. The various paps, cordials, and other mixtures so frequently given to infants by ignorant nurses, is almost certain to produce various unpleasant, and even serious maladies, as flatulent colic, looseness of the bowels, ulceration of the mouth, convulsions, &c.; parents cannot be too careful in this matter. When from any good and proper cause the mother cannot give suck to her child, a wet-nurse must be obtained. One should be selected whose child is about the same age as the one she is to suckle, who is of good temper, not liable to fits of passion, free from any vicious propensity, not exposed to any trouble or anxiety of mind, of good health, with clear, sound skin, perfect teeth, clean mouth, moderately sized breasts, firm, not flabby, and a prominent nipple, not too large, and whose milk is thin, clear, very limpid, sweet, of a bluish-white color, and, if allowed to stand for awhile, covered with cream. Great care should be taken to learn that she is cleanly in her person, and not tainted with any disease. And it should always be stipulated that, if the child does not thrive upon the milk of a wet-nurse, her engagement is at an end.

If a wet nurse cannot be obtained, the infant will have to be "raised by hand," or by artificial feeding. Over one-half of the children attempted to be brought up this way, die quite young. Cow's milk is the best substitute for the mother's milk, and it should be always obtained from one cow only, and be fed to the child in as fresh a state as possible; the older the milk, the more it becomes unfit for the child. The milk may be diluted with one half or one-third its quantity of water, and be fed to the child, warm, and without the addition of sugar, or if sweetening at all is required, let it be with *sugar of milk*, which can be had at any respectable drug store. Ordinary cane sugar should not be given to infants, it is injurious to them, frequently occasioning diseases which are difficult to remove, and the cause of which is unsuspected. A chemical examination of cow's milk will find it to contain nearly the same proportion of sugar as the human milk; hence, there is no necessity for increasing its sweetness, and especially, by cane sugar. In giving the child its artificial food, it should be attended to with

regularity and punctuality, feeding it only at certain hours, and permitting it to suck the fluid from a bottle instead of pouring it down the child's throat with a spoon. The act of sucking causes an increased flow of saliva in the child's mouth, which materially aids in the digestion of its food ; in pouring from a spoon, the flow of saliva is limited.

An infant should be washed all over with soap and warm water every morning ; cleanliness of its person, and of its clothing, is a very important measure to secure its health and comfort. After washing, those parts which are liable to friction, as the arm-pits, buttocks, folds of the groin, creases of the neck, &c., should be well dried and then dusted with powdered starch to prevent chafing. A little pomatum rubbed on the head at night, and washed off on the next morning, and continued daily, will remove the scurf from the head much better than a comb, which irritates and increases the difficulty. This course of cleanliness will prevent diseases of the skin, and of the scalp. The dress should always be loose and comfortably warm, and exercise, talking and laughing with the child, walking with it in the open air frequently in fine weather, are all advantageous. Be careful, however, not to lift or toss the child too violently, or carelessly, as great mischief may result ; never lift it by its arms, lest dislocation or fracture be produced. All the contrivances of the present day to have the child walk at an early period, are unnatural and injurious, causing deformity of the limbs and body. The muscles of the back must be strengthened, as well as those of the limbs, before the child can walk firmly and erect, and this can be accomplished in no way so perfectly and naturally as by allowing it to creep. Yet to avoid trouble, and prevent the child from soiling its clothes, some parents appear to be willing to sacrifice its goodly proportions.

The sleeping periods of an infant should be properly regulated, so that it may be accustomed to certain hours for sleep, as well as for food. It should be so arranged that once or twice nursing it during the night will be sufficient : if this be done, and the child be kept cleanly, and properly exercised through its waking hours during the day, it will not be restless nor fretful, unless it be sick or in distress of some kind. Accustom it as much as possible to regularity in every thing, washing, dressing, feeding, exercising, sleeping, &c. And when it appears to be restless or wakeful, do not dose it with Godfrey's Cordial, Laudanum, Paregoric, hot Gin sling, &c., which though they produce quiet and sleep, do it at the expense of the health, and sometimes even the life of the child ; but ascertain what is the cause, and use means to overcome it. Frequently, placing it in a warm bath for a few minutes, will soothe it, and cause it to fall asleep.

The child, as a general rule, should be weaned at the ninth or tenth month, except it be unwell or suffering from teething, at which times it must not be weaned. Winter and summer are inconvenient seasons for weaning, spring and autumn are the best periods for this purpose. Suckling continued beyond the twelfth month, is unnecessary for the child, and, in most cases, positively injurious to the mother ; too long nursing is apt to occasion a tendency to diseases of the brain among children. Previous to attempting to wean the child, it should be prepared for the change by being fed occasionally with such food as it is to subsequently be a partaker of.

EXTERNAL SIGNS OF DISEASE IN INFANTS.

BESIDE discoloration of the skin, tumors, flaccid abdomen, swollen abdomen, increased heat of the body, &c., there are certain symptoms which indicate disease in infants, to which attention will be briefly called. Thus, a permanent dilatation of the pupil of the eye, with a livid tint of the countenance, and a flaccid condition of the face, is usually an indication of effusion, or water on the brain. Squinting occurring suddenly, manifests danger, more especially when other symptoms are present; when it occurs gradually, without other symptoms, it may be owing to worms, or derangement of the digestive organs. When the pupil of the eye is very much contracted, with the eye half-closed, a red, streaked condition of the white of the eye, and the eyebrows knit or frowning, it is an indication of some active inflammation of the brain; and, in whooping-cough, the permanently contracted or dilated condition of the pupil, shows that the brain is about to suffer. Convulsions may be expected, when the eyeball is fixed and turned upward, the eye bright and glassy, and the pupil dilating and contracting. A hollowness of the eyes, with a dark circle around them, is an evidence of great debility. Any peculiar and not usual movement about the nose and lips, is an indication of disease about the chest and abdomen. A transient swelling of the nose and upper lip, is common when worms are present, or when there is irritation of the bowels; but if the swelling be permanent, it may be an indication of a scrofulous diathesis. When the nose is pinched or drawn in during respiration, the mouth being open, and the lips sometimes livid and puckered, there is some obstacle to the free passage of air to the lungs. When the inside of the nose is dry, the lips pale and cracked, and especially if there are spasmodic motions of the lower jaw, the brain is in danger of an attack of disease. In acute bronchitis, the face is remarkably pale, but becomes more or less livid in the latter stage, especially if about to terminate fatally. In infantile remittent and typhus fevers, the face is constantly flushed, becoming pale and shrunken toward the termination of the disease.

When one limb is unusually quiet, or is moved by sudden jerks, it is probably the seat of pain; when the legs are forcibly drawn up toward the belly, there may be pain or inflammation of the bowels; if the body be doubled up, it is an indication of pain or inflammation in the chest. Spasmodic contraction of the muscles of the face, neck, limbs, fingers, or toes, may be the premonitory sign of convulsions from irritation of the brain, and may be met with during the cutting of teeth. Painful dentition is also often accompanied with acid stomach, and diseases of the skin. Palsy of the limbs may occur during teething, irritation of the stomach, or, on the decline of fever, it may likewise depend on disease of the brain or spinal marrow.

Crying is not always a manifestation of pain, except when severe, sharp, and long-continued. Fretting is always a sign of uneasiness; it may arise from fatigue, want of sleep, want of food, too much food on the stomach, irritation from pins, bandages, &c. Long-continued fretting indicates some commencing disease, and should be at once attended to, especially, when there is also a frequent disposition to doze, or to short sleep, from which the child starts suddenly on the least noise or motion. Protracted, shrill, and piercing screaming, manifests pain, or inflammation at an early period of the attack; when the organs of breathing are attacked, the screaming will be by fits and starts. Moaning is a symptom of pain accompanied with debility or depression; when it is preceded by deep sighs, there is a ten-

dency to effusion on the brain ; when the legs or body are drawn up in addition, there is suffering in the stomach and bowels ; and when the moaning follows violent and shrill screaming, with extreme languor and stupor, the case is very dangerous.

Wakefulness is an indication of irritation of the brain, or of great exhaustion. Starting during sleep is usually connected with worms, irritation of the bowels, or indigestion. Intolerance of light and tossing of the head, is symptomatic of pain in the head. A short, catching inspiration, with more or less cough, and an expression of pain or suffering on the countenance, at each inspiration, is an evidence of inflammation of some of the organs of the chest. A pale countenance, and wheezing and laborious breathing, is a symptom of acute bronchitis. A spasmodic cough is usually a mark of some affection of the brain ; a cough with mucous expectoration is of the lungs or bronchia ; a dry and irritative cough arises from disordered stomach ; and a crowing sound directs us to the larynx, as in croup. Cough with a hollow sound denotes irritation of the stomach or bowels, worms, &c. Panting, or quick breathing will point out the lungs as involved ; palpitations, the heart ; constipation or diarrhea, the bowels ; nausea or vomiting, the stomach. When the discharges from the bowels are ash-colored or clay-colored, it is an indication of deficient bile, or an obstruction to its regular flow into the intestines. When they are liquid, and of a bright green color, a great amount of acid is in the bowels. Bile is never green, but yellow, and however dark the stools may be containing bile, if water be added, a yellow color will be communicated to it.

INFANTILE DISEASES.

RED GUM (*Strophulus Intertinctus*) is a disease of the skin, usually appearing within four or five days after birth. It consists of minute red points or elevations, occurring in irregular patches, and which pass off in a few days. Sometimes yellowish vesicles are formed, and a slight ulceration of the skin may follow. It is not a dangerous affection, and appears to be owing to the stimulating action of the atmosphere upon the skin, to the stimulus given to the blood by its augmented oxygenization, and to the efforts to relieve the alimentary passage. It seldom requires any treatment. It is customary to give the child an infusion of Saffron and Catnip, which cannot be objected to as it does no harm. It is well enough to dust the skin often with powdered Elm, Starch, Arrowroot, &c. ; and should the liver, stomach, or bowels appear to be disordered, the Compound Syrup of Rhubarb and Potassa in small, laxative doses will usually effect the cure.

JAUNDICE, or *Yellow Gum*, is an affection occurring in the first days of the infant. A dull yellow tinge, frequently extending over the whole surface of the skin, nails, and eyes ; and even to the urine, which imparts a yellowish stain to the napkins. This may be owing to a slight torpor of the liver, or some transient obstruction of the bile ducts, and is rarely of a serious nature. An infusion of Catnip and Saffron is the usual remedy. Sometimes, there may be fever, with light, or ash-colored stools, in which cases, the Compound Syrup of Rhubarb and Potassa will generally be found efficacious ; or an infusion of the *Leptandra* root. Occasionally, jaundice of a dangerous character occurs during infancy, which is due to actual disease of the biliary organs, and must be treated as named under **Chronic Inflammation of the Liver**.

When there is a Rupture of the Navel, it is termed "Umbilical Hernia," and may appear at any period of infancy, being caused by any kind of straining, as from flatulent colic, excessive crying, violent coughing, sneezing, &c. Any delay in treating it increases the difficulty of cure. The operator, having the child lying on its back, with the legs drawn up toward the belly, so as to relax the abdominal muscles, will gently press the projecting swelling within the umbilical orifice, then apply a pad or compress of sponge covered with linen, and keep it in its place by a strip of adhesive plaster and a bandage. The pad should be of a conical shape, and may be made also of linen filled with bran, or a properly shaped piece of cork covered with soft linen. This must be worn until the difficulty is removed. In obstinate cases, an "umbilical truss" may be required. Those made by Mr. Marsh of New York, and those made by Mr. A. J. Howe, of Cincinnati, will be found equal to any. The bowels of the child should not be allowed to become constipated.

EXCORIATION OF THE NAVEL yields to cleanliness, bathing it with Castile soap and water, and then applying to it the mild Zinc Ointment; or, the ointment named in the Introduction for blistered feet, on page 143. Should a disposition to mortification be manifested, powdered Sulphate of Zinc, or its solution in water, may be placed upon the part, and covered with a bread and milk, or Elm poultice; and tonics, as infusion of Peruvian bark, Colombo, or Gentian, &c., should be given to sustain the child's strength. A poultice of powdered Marshmallow root, Wild Indigo root, and Charcoal, equal parts, mixed together with a weak solution of Sulphate of Zinc, will frequently arrest gangrene.

When the CORD BLEEDS, as before stated, place another ligature immediately below the one first applied.

Sometimes, there will be a BLEEDING FROM THE NAVEL, after the navel-string has fallen off; constant compression with lint dipped into some astringent infusion, will in a few days overcome this. However, should there be "proud flesh" sprouting forth, powdered burnt Alum, or Sulphate of Zinc may be sprinkled upon it, or even the Sesquicarbonate of Potassa, after which dress the part with the mild Zinc Ointment, or Red Oxide of Lead plaster. Inflammation must be allayed by an Elm poultice.

Children have sometimes a *swelling of the breasts* after birth, owing to cold, injuries, or a milky secretion; the breasts frequently become very hard. A mixture of three parts of Olive Oil, and one part of Tincture of Camphor, rubbed over the affected breast, and followed by Mullen leaves, or St. John's wort flowers, in fomentation, or a poultice of Elm, if there be much inflammation, will generally effect a removal of the difficulty. Should ulceration be produced, treat the same as an ordinary ulcer.

PART II.

SURGICAL DISEASES.

UNDER this head will be considered several accidents and diseases of common occurrence, which have heretofore been assigned to the department of the surgeon only, and which have not been treated upon in a previous part of the work. I shall not enter into any unnecessary disquisition upon these subjects, as it would prove of little or no interest to the general reader, but will at once proceed briefly to recommend measures that may be pursued for the relief of persons, who cannot readily procure the aid of a surgeon.

GANGRENE, OR MORTIFICATION.

BY Gangrene, or Mortification, is meant the death or decomposition of one part of the body, while the remaining parts continue to live in a more or less healthy condition. When the part has become motionless, cold, without any feeling, and of a livid or dark color, it is called SPHACELUS; the term *gangrene* is applied to the first or incipient stage. Mortification is one of the terminations of active, inflammatory diseases, as well as those of a passive, debilitated character; thus it may follow violent inflammatory affections, burns, intense cold, caustic applications, severe wounds or injuries, compression on large bloodvessels, scurvy, dropsy, ossification of the arteries, &c.

SYMPTOMS. When it follows inflammation of the external parts, the symptoms are about as follows:—The pain is excessive, the inflammation extensive, and frequently there is delirium; the pain finally ceases, the part becomes flaccid, loses its heat and sensibility, and is of a dark, livid color; the skin is raised in various parts like blisters, of a brown color; the blood coagulates in the vessels of the mortified part, and the circulation is destroyed; the part soon becomes black, and emits a fetid odor. In connection with this the system is very apt to suffer, the pulse becomes quick, very small and thready, and often irregular; there is an irritative fever; a fixed flush on the countenance; great anxiety; prostration of strength; sometimes a slight delirium; vomiting; hiccough; and death.

Old persons are subject to a kind of gangrene which is termed *dry mortification*; it commences in one or more of the toes or foot, and passes to the upper part of the leg, destroying all the parts attacked by it. In this form, unlike the previous, the diseased parts are dry and hard, and not so subject to putrefaction. Persons who are very much debilitated by disease, or intemperance, are seldom cured of this complaint; while on the other hand, those of ordinary health may be cured by proper treatment.

TREATMENT. Means must be used internally to sustain the strength of the patient, as a decoction of Peruvian bark aided by a nourishing diet; if the debility be very great, Wine may be administered, as Port Wine and Peruvian bark, the Compound Wine of Comfrey, or Carbonate of Ammonia, &c., being careful not to administer these stimulants as long as any inflammatory symptoms remain, and the pulse is strong.

Local applications must also be used; thus, a poultice of Elm bark, to which some Yeast and Charcoal have been added, will be found very efficient in correcting the fetor, and arresting the gangrene. As the surrounding parts are subject to destruction from the extension of the gangrene, it will be well to add some gentle stimulus to the poultice for the purpose of supporting their action—and for which Brandy, Port Wine, stale Beer, &c., may be used. A poultice of Elm bark and Pyroligneous Acid has promptly arrested gangrene; or, pulverized Marshmallow root may be used as a substitute for the Elm bark. A mixture of powdered Black Cohosh root and Wild Indigo leaves or root, used as a poultice, or, scraped Carrots and Indian meal, have been used with much advantage in cases of gangrene; likewise the following:—Marshmallow, Wild Indigo, Charcoal, and Yeast; and also Black Willow bark, Wild Indigo, and Button Snakeroot. Sulphate of Zinc, in powder, placed over the affected part has been found very beneficial.

When the further progress of the gangrene has been arrested, and the dead parts are about to separate from the living, the first indication is a white line at the verge of the sound part, the skin is elevated at this line, and separates, the dead from the living, in a few days; after which the various decomposed tissues slough away, leaving a healthy, suppurating ulcer, which must be treated as a simple ulcer.

In dry mortification, beside the above local applications, much benefit will be derived from the internal use of Peruvian bark, or a pill of Sulphate of Quinia and Opium, and Carbonate of Ammonia.

WOUNDS.

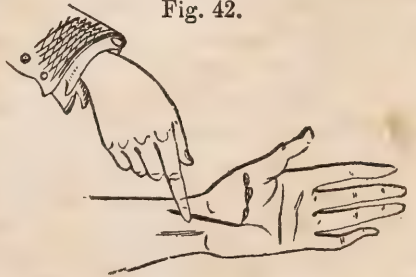
WOUNDS are divided into several classes, according to the instruments producing them; thus, a *simple incised wound*, occasioned by a sharp, cutting instrument; a *lacerated*, and *contused wound*, effected by a rough instrument, as a saw, or club; a *punctured wound*, when it is the result of a sharp pointed weapon, as a sword, bayonet, &c.; a *gunshot wound*, when occasioned by the explosion of gunpowder; and a *poisoned wound*, inflicted by some venomous animal or insect. Wounds of arteries, large veins, of the abdomen, chest, throat, of joints, and tendons, should always be treated by a medical man; though bleeding may be arrested until his arrival, by the bystanders using the plan named below.

TREATMENT. The most favorable kind of wound is the **SIMPLE INCISED**, and in its treatment three things are to be observed, viz:—To check the bleeding as soon as possible; to remove from the wound all dirt or foreign matters; and to bring the parts properly together and have them remain so. When the bleeding is rather profuse, it may be checked by a steady, continued pressure made upon the surface of the wound with a finger, a soft piece of sponge, soft lint, or a piece of linen; and, frequently, the arrest of the bleeding may be facilitated by moistening the compress with some astringent, as a solution of Tannic Acid, or of Alum, or a decoction of White Oak bark. When the bleeding has ceased, any coagulated blood,

dirt, pieces of glass, &c., must be sponged away from the surface and edges of the wound, the edges brought carefully together, and strips of adhesive plaster applied across the wound in such a manner as to hold the edges together, and, if necessary, securing the whole by light bandages. When the wound is extensive, or is made in some part of the body very difficult for the adhesive plaster alone to hold the parts together, a few stitches will have to be taken. Simple incised wounds usually heal readily, without any matter being formed. The part should be kept quiet and cool, and should not be disturbed for three or four days, when, if necessary, the dressing may be removed; but, in large wounds, it will be better to allow it to remain a few days longer. The applications of Balsam, Turpentine, Salt and Vinegar, Rum and Sugar, &c., to incised wounds, interfere with the healing of the wound by causing undue inflammation, and should, therefore, never be used.

It is frequently the case, in wounds, that some large bloodvessel is divided or lacerated, and which from the continued discharge of blood, causes considerable difficulty as well as delay in the treatment of the wound. When the bleeding is from an artery, the blood is of a bright scarlet color, and gushes out by jets in a rapid manner; when from a vein the blood is of a dark purple red color, and flows in an even, unbroken stream. If it be a vein which is divided, unless very large, the flow of blood may be arrested by gentle pressure, effected with a compress and bandage. If it be a divided artery from which the blood is gushing, and especially if it be a large one, a ligature will have to be placed around it by a surgeon, for no other person should attempt such an operation. But as the patient may bleed to death before the arrival of the surgeon, it is proper to state what may be done to check the bleeding, and thus save his life, for a few minutes delay in a case of this kind, often proves fatal. The person wounded, or some other

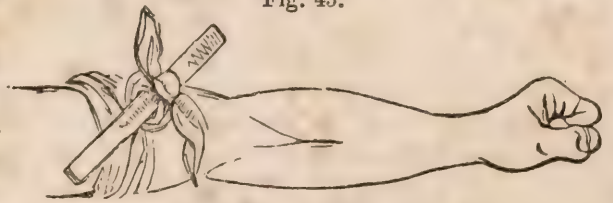
Fig. 42.



Arresting Hemorrhage.

person present, should make firm, and if necessary, powerful pressure on the artery, just above the wound, and *always between the wound and the heart*. The pressure may be made with the thumbs, the ring of a key, or other solid substance. The position of the artery may be ascertained by observing the direction from which the blood gushes, and if the wound be deep, as on a limb, firm and powerful pressure, so as to feel the resistance of the bone underneath, may be required. If the bleeding continue, the pressure is not upon the artery, and its direction must be at once changed. As soon as possible a strong bandage, or a twisted handkerchief, must be applied round the limb, and as before, *between the wound and the heart*, for on any other part it would be useless; after this has been fastened around the limb, a stick may be passed through it, with which it may be twisted and tightened sufficiently to check the hemorrhage until the artery can be secured with a ligature; in some cases, a compress will have to be placed over the artery, between the bandage and surface of the limb. By this means a man's

Fig. 43.



Arresting Hemorrhage.

life may be preserved for hours, in places where physicians live at a distance, and cannot be immediately had. It is not proper, however, to apply such a ligature to a divided vein.

LACERATED WOUNDS are accompanied with much less bleeding than simple incised wounds; the largest arteries may be torn without any severe hemorrhage taking place, but the danger lies in subsequent or secondary hemorrhage. They are generally followed by great inflammation and supuration, and do not heal very kindly. Chills, spasms, lockjaw, and erysipelatous inflammation, are not uncommon effects of laceration. The **TREATMENT** is somewhat similar to the preceding: the wound must be carefully cleansed from all foreign bodies, and the torn parts brought together as nearly and as perfectly as possible, and held thus by straps of adhesive plaster, or stitches and plaster; but too many stitches are to be avoided, as they will aid in augmenting the subsequent inflammation. Any great amount of inflammation may be lessened by a poultice of Elm, of Elm and Lobelia leaves, &c., and sometimes by the application of Tincture of Arnica, or of St. John's wort. In many instances a cloth kept moist with cool water will answer every purpose. If, however, the parts show no disposition to unite, it will be better to remove all adhesive straps, allay inflammation as above, and apply the red Oxide of Lead plaster over the wound. The bowels must be kept open, constitutional symptoms met according to their nature, together with a cooling regimen. If gangrene manifests itself, treat as recommended for this, on page 552. Any fungus or proud flesh may be kept down by sprinkling on it some Sesquicarbonate of Potassa, or powdered Bloodroot.

CONTUSED WOUNDS are frequently very obstinate, and are apt to occasion much pain when not severe, and but little or no pain when very severe, because in the latter instances, the injury has been so great as to destroy the sensibility, if not the organization, of the part wounded. The principal danger lies in the presence of excessive inflammation, followed by mortification, &c.

TREATMENT. In *slight bruises* the Tincture of Arnica, or of St. John's wort, may be kept constantly applied on the part by means of lint, or a piece of linen. When the wounds are severe, and there is considerable extravasation of blood, as known by the large purple or dark colored spots, leeches applied over the spots at an early period will lessen the tendency to severe inflammation and expedite the cure. The rest of the treatment will be similar to that named for lacerated wounds.

PUNCTURED WOUNDS are not always injurious, as much will depend on the state and disposition of the constitution. Thus, one person may be pricked with a pin from which no unpleasant results will follow, while a similar wound in another will occasion lockjaw. This class of wounds are dangerous on account of their depth, injury to bloodvessels, nerves, or vital organs, and the degree of inflammation they occasion.

TREATMENT. The hemorrhage must be checked, foreign bodies removed if any have been left in, and inflammation kept down by cooling applications, leeches, &c. The edges of the wound should be kept separated, being careful to heal the wound along from the bottom first, and not at the external part of it, so that if the wound should suppurate, the matter may be discharged through the external opening. The patient must be kept perfectly quiet, and when the pain is severe, a pill of Opium, or a dose of the Compound Powder of Ipecacuanha and Opium, may be administered. Any matter that forms must be evacuated as quickly as possible, so as to avoid an extensive abscess. It will sometimes be necessary, when the wound is not in the vicinity of any important vessels or organs, to enlarge the opening with a lancet, and thus convert the cut into a simple incised wound.

GUNSHOT WOUNDS vary much in their effects upon persons, some suffer-

ing but little and recovering even when the wounds are considerable, while others will suffer much, and even die of lockjaw, from apparently slight wounds. They frequently require amputation of the injured limb in order to save life.

TREATMENT. When amputation is not demanded, the wound should be examined, and if possible, the ball, shot, pieces of clothing, &c., which have been forced in, must be removed. There is no necessity, however, for being too anxious about removing the ball, &c., particularly when it is so situated as to be almost impossible to take hold of it; for it may be discharged by subsequent suppuration, or, as has frequently happened, it may remain in the flesh without being at all incommodious. After cleansing the wound, inflammation must be kept down by cooling applications, Elm poultice, &c. The patient must be kept quiet, and in other respects treated the same as named for punctured wounds. Be careful never to enlarge a gunshot wound by cutting it, or by the introduction of tents. After suppuration has taken place, support the strength by Peruvian bark, nourishing diet, &c., and be ready to arrest any bleeding which may occur from subsequent gangrene, or destruction of the exposed portion of some large bloodvessel.

The most common among POISONED WOUNDS are the bites and stings of insects and snakes. The bite of a rabid animal has already been treated of.

TREATMENT. The bite of a gnat, wasp, hornet, bee, spider, &c., may be treated by applying a poultice of equal parts of Elm bark and Lobelia leaves with ley water, to the affected part, renewing it three or four times a day, and at each time bathing the part in some ley water for ten or fifteen minutes; if the pain be very severe, a few drops of Laudanum may be added to the poultice. Other articles have also been found to answer, as the application of the cut surface of a raw onion or garlic to the wound, changing it every fifteen minutes; a poultice of Plantain leaves, common salt, and water of Ammonia, has likewise been successfully employed, as well as smearing the part with Olive Oil. When a bee, wasp, or hornet stings, it not unfrequently happens that a part of the sting remains in the wound, and which should always be carefully pulled out with a pair of tweezers.

The bite of the viper as well as of the rattlesnake is very dangerous, and especially that of the latter. As soon as bitten, a ligature made of twine or handkerchief, bark, &c., must be placed around the limb or part, if the situation will admit of it, between the wound and the heart, so as to prevent the blood circulating from the wound to the heart; this ligature must not be too long continued. Then wash the wound freely with Aqua Ammonia, or it may be cauterized by Caustic Potash, Nitrate of Silver, or hot iron. If symptoms of depression come on, Brandy may be given, or Whisky, Brandy and Sweet Oil, Brandy and Ammonia, &c.; a peculiarity attending those who have been bitten by poisonous snakes is, that alcoholic drinks, even in almost inconceivable quantities, not only cause no intoxicating influences, but tend powerfully to restore the patient from the dangerous effects of the bite. Many articles have been recommended as antidotes to snake bites, among which are the Bellwort, *Uvularia Perfoliata*, boiled in milk, and the decoction drank freely, with a poultice of the root applied to the wound; an infusion of the Rattlesnake Violet, *Viola Ovata*; Lion's Foot, *Nabulus Albus*, in decoction; Button Snakeroot, *Liatris Spicata*; Hawkweed, *Hieracium Venosum*; Net-leaf Plantain, *Goodyera Pubescens*; Water Eryngo, *Eryngium Aquaticum*; False Aloe, *Agave Virginica*, &c. Many of these, however, have fallen into disrepute, but whether from the result of impartial investigations, or improper prejudices, I am unable to say. Undoubtedly, the

Indians, who previous to the settlement of this country by the whites, were daily exposed to the bites of the rattlesnake, adder, &c., must have known and used some antidotes, notwithstanding what may be said by prejudiced persons at this day.

The *Anemone Cylindrica* of Gray is used by the Indians for the cure of a rattlesnake bite. Their mode of using it is, to chew some of the tops of the plant, swallowing but little of the saliva, and then applying it to the bite soon after its occurrence; in a few minutes the poison is rendered harmless. When chewed the tops have a hot, pungent taste, somewhat like Capsicum.

The absorption of the poison may also be removed by cupping in the ordinary way, and afterward applying Aqua Ammonia to the part, or a solution of Sesquicarbonate of Potassa.

FRACTURES.

WHEN a bone is broken it is said to be fractured, and which is commonly caused by blows, or similar accidents. If the bone is broken into two or more pieces, without any external wound, it is called a *simple* fracture; but where, in addition, there is an outward wound, communicating with the fractured edges of the bone, it is called a *compound* fracture, which is the more serious form of fracture.

The *symptoms* of fracture are sometimes very obscure; there will be pain and an inability to move the limb, but these may be owing to a bruise, a dislocation, &c. Usually, there is a loss of motion in the injured limb, pain, swelling, shortening of the limb, as well as a change in its form, together with a grating noise or sensation when the fractured ends of the bone are moved and rubbed against each other; when the bone is superficial, and its separation and the irregularities of its fractured ends can be felt, we have a positive symptom of fracture.

TREATMENT. When, from an accident, there are reasons to believe that some one or more bones have been fractured, the patient must be handled and removed with great care from the place where the injury occurred. If

Fig. 44.



Hurdle to carry a person with a Fractured Limb. he be at some distance from a dwelling, he should be placed upon a board, a shutter, a sled, or something of the kind on which he can rest easily and be carried without jarring him, and thereby causing unnecessary pain. In removing him upon the board or shutter, &c., no more persons should assist than are sufficient to raise him gently and quickly, act together, and not interfere with each other. As to the position in which the patient may be placed, he will generally find out for himself which is the easiest, unless he be drunk or insensible; on no account should the injured limb be permitted to hang down, dangling or rolling about, but should be supported by pads of straw, leaves, &c., to steady it, and prevent it from moving.

In all cases of fracture the attendance of an experienced physician is necessary; but it sometimes happens on shipboard, in newly-settled districts, &c., not only that no physician is at hand, but often that one cannot be procured for days or weeks. Therefore, in such cases, when the patient has arrived at his dwelling-place, or bed, it will be well for some intelligent person to insti-

tute an examination to ascertain if a bone be fractured. The thumb or finger passed along the course of the bone will generally detect the fracture, by the sensation of roughness or unevenness communicated, or, a depression of one part of the bone and an elevation of the other will be found; on rotating or moving the fractured part of the limb, a grating noise called *crepitus* will be heard, with a grating sensation or a jar imparted to the feeling; there will be an inability to move or raise the limb, and which will generally be shorter than its fellow.

Having ascertained that a fracture exists, there are three things to accomplish, 1st, to replace or reduce the pieces of bone into their natural situation, with their fractured ends in perfect contact; 2d, to secure and keep them in this state; and 3d, to prevent and relieve any unpleasant symptoms that may arise, as excessive inflammation and pain.

To replace the bones the patient must be conveniently placed upon a bed or mattress, and if the edges of the fracture have passed by each other, or are not in exact adjustment, the physician, or person acting as such, should grasp the lower part of the fractured limb, while an assistant takes hold of its upper part, and each should gently pull, but with gradually increasing force, in directly opposite directions, making *extension* and *counter-extension*, as it is termed, which will enable the operator to ascertain, with his own hand, whether the fractured bones are in a direct line with each other, whether they are properly adjusted, forming no prominences or depressions, and to make such changes in the limb as may be required. The degree of force necessary in making extension and counter-extension will vary in different cases, according to the degree of resistance met with from the contraction of muscles. Sometimes it may be necessary for two assistants to make the extension and counter-extension, so that the operator may have both hands at liberty to arrange the limb.

The bones having been brought properly together, they must now be secured by splints and bandages. The splints may be made of narrow flat pieces of light wood, tin, or stout pasteboard, of the length of the limb, and these are to be placed lengthwise along the limb, on various parts of it, for the purpose of keeping it immovable,—protecting the skin from chafing or other injury by placing a thin layer of cotton between it and the splints. The splints must be secured by a bandage made of muslin or linen, about three or four inches wide, and several yards in length, or long enough to bandage the limb with. The bandage must be rolled up for use. The splints being held in place by one or two assistants, the operator will commence applying the bandage, always at the lower part of the limb and advancing toward the upper, securing the splints by a sufficient degree of compression. Considerable skill is required in the application of the bandage, to have it smooth and make a proper degree of compression, which, however, cannot be described in words; if it be placed on bunglingly it will soon loosen and slip down; if it be too tight it will increase the swelling and cause unnecessary pain.

The limb having been thus attended to, it may rest on a pillow, supported in a *bent position*, or, if it be the arm, it may be carried in a properly made box and sling; and excessive inflammation may be prevented or diminished by the application of cold water, or equal parts of water, spirits and vinegar, preventing its too rapid evaporation by covering it with a dry cloth. The patient should be kept still, obviating any irritability of the system, or twitching of the tendons, by one or more doses of the Compound Powder of Ipecacuanha and Opium. In about a week, if there is no reason in the meantime to believe that anything is wrong, the bandage and splints may be re-

moved to examine and ascertain that the parts are in proper condition, after which they must be reapplied; a second examination may be made after eight or ten days longer have passed. The patient should be kept upon a light diet, and should not be allowed to make use of his limb, too soon after the fracture has united. One daily evacuation must be had from the bowels, but without causing the patient to move the injured limb. At sea, in order to overcome the bad results which might happen from the tossing and rolling motion of the ship, the patient should be placed in a swing cot or hammock; and this should be observed in all cases of fracture or dislocation occurring on shipboard.

Fracture of the ribs, and of the collar-bones require prompt attention; but in broken limbs, where there is much swelling and inflammation, these may first be overcome before attempting to set the limb, so that three or four days may pass before the application of the splints and bandages. When a limb is bandaged tightly, before the swelling has been reduced, it not only causes much pain but is apt to cause mortification. Severe pain is an indication that the bandage is too tight and must be loosened.

In COMPOUND FRACTURES we must be guided by the same general rules as in simple fractures. Any splinters of bone, dirt, or other foreign matters must be carefully and gently removed; the bones placed together properly as in simple fractures by extension and counter-extension, and the splints and bandages must be so arranged that the external wound can be dressed daily, without having to remove them and thereby hazarding subsequent displacement of the fractured bones. Any great degree of inflammation may be prevented or diminished, by the application of Tincture of Arnica, especially at an early stage, cold water, poultice of Elm and Lobelia, &c. Purgatives may also be necessary, as, Seidlitz Powders, Compound Powder of Jalap, with ten or fifteen grains of Cream of Tartar added to the dose, or, Podophyllin and Cream of Tartar. The wound must be treated the same as any other, bringing the edges together as much as possible, and securing them by straps of adhesive plaster. Gangrene must be met by the means recommended on page 552.

In the examination of all fractures, as well as after their treatment, compare the parts with the opposite sound parts, or with the parts of another person. Sometimes, in compound fractures, amputation of the limb will be required in order to preserve the patient's life, hence the necessity of always having a medical attendant as soon as possible. I will now refer to a few particular fractures.

FRACTURE OF THE NOSE.

THE bones of the nose are frequently fractured, being generally depressed.

TREATMENT. As a general rule, they may be readily adjusted by means of a quill, a female catheter, or any similar instrument, passed into the nostrils, using it as a lever to push out the broken bones; while the fingers of the other hand placed on the outside of the nose, will prevent them from being pushed out too far. Inflammation and swelling may be kept down by the application of cloths wet in cold water, or other cooling liquid.

FRACTURE OF THE LOWER JAW.

THE lower jaw may be fractured at several points, and the fracture may be simple or compound; it usually takes place about the chin, sometimes near the angles of the jaw, and may be known by the pain on moving the jaw, the cavity felt at the fractured part by the finger, the irregular position of the teeth, and by the grating sensation on moving the bone.

TREATMENT. Introduce one or both thumbs into the mouth, and by depressing, or keeping the back-part of the bone stationary, at the same time elevating or bringing the fore-part forward with the fingers, the fracture can readily be adjusted. After accurately replacing the parts, the mouth should be shut, a thick compress of lint should be placed over the seat of the fracture, and over this a piece of stout leather, or wet pasteboard should be applied, and the whole secured by a bandage. The bandage may be made of strong muslin, about two inches and a half wide, with a small bag or purse to receive and hold the chin, with four ends to be so fastened as to hold the jaw

Fig. 45.



Fracture of the Lower Jaw.

Fig. 46.

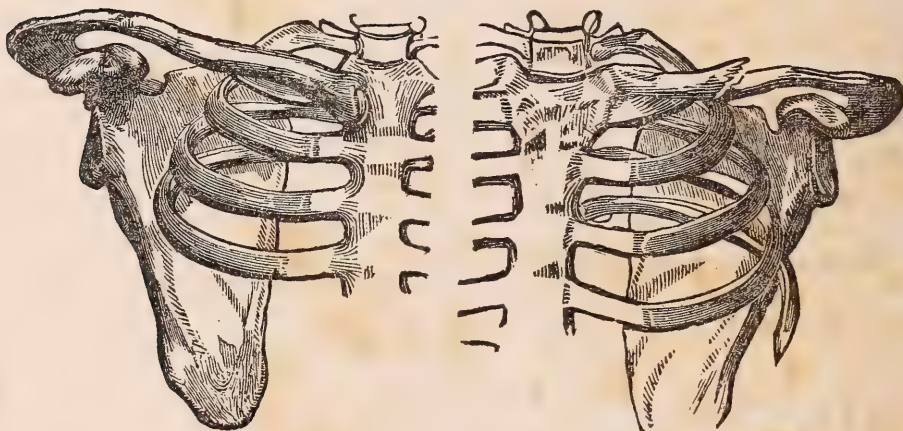


Adjustment of Fractured Lower Jaw.

firmly upward, as well as backward—two being carried over the top of the head, and two to the back; or as is shown in Figure 46. The paste-board must be wet, the better to mould it to the shape of the jaw. The patient should be kept quiet, and until the bone is firmly united should be fed on broths, soups, jellies, &c., by means of a spoon, not being allowed to exercise his jaws in chewing food.

FRACTURE OF THE COLLAR-BONE.

Fig. 47.



Fractured Clavicle.

THE clavicle or collar-bone is usually fractured obliquely and near its middle; occasionally it may give way nearer to one or the other of its extremities. A fracture of this kind may be known by the pain produced on motion; the patient not being able to raise his hand to his head; the arm of the fractured side falling upon the breast; the shoulder falling forward and inward; and the crepitus or grating noise occasioned by moving the arm or shoulder. If the finger be passed along the collar-bone, one of the fractured extremities will be felt to project over the other, causing a protuberance not to be found in the opposite unbroken collar-bone.

Fig. 48.



Fractured Clavicle.

TREATMENT. In the treatment of a fractured collar-bone, an assistant, standing behind the patient, will firmly draw backward both arms and shoulders, until the fractured ends of the bone meet and come into proper contact with each other. Then place well up in the axilla, or arm-pit, of the affected side, the base of a wedge-shaped pad or cushion, whose measurement is six inches in length, four or five in width, and three inches thick at its base. This pad must be kept in its place by pieces of tape attached to each end of the base, which are to be passed (one in front of the chest, and the other on the back) around the neck; placing a small pad on the opposite side of the neck where the tapes meet, to prevent excoriation of the skin. A bandage about two or three inches wide, is now to be passed once or twice around the arm just above the elbow, in such

manner as to leave two long ends, both of which are to be passed around the chest, one before and the other behind, repeating the operation four or

five times, carrying the bandage each time a little upward, and also including the arm so as to keep it and the elbow as close to the side as the pad will permit. A short sling, which will contain the elbow and greater part of the forearm, and at the same time will lift up the shoulder and not permit it to hang its full weight, is now to be passed over the neck on the sound side, and the elbow and fore-arm placed within it. This should be worn for four or five weeks, in order that the bone may firmly unite. The more completely the shoulders are drawn backward, and held so until the operation is finished, the better will be the result of the operation. Where there is a disposition to excoriation of the skin from the tapes or bandages, raw cotton may be placed under them to prevent it. The forearm must be kept still, else there will be a necessity for passing a few turns of a bandage around it, the sling, and the chest, to prevent motion.

This is the plan usually recommended to be pursued in the management of fractured collar-bone, but it frequently occasions accidents from pressure of certain nerves or arteries, occasioning neuralgic pains, paralysis, &c. The best mode of treating this fracture is that introduced into the Philadelphia Hospital, in 1828, by Dr. George Fox, as follows:—A dressing for fractured clavicle consisting of a stuffed ring made of muslin with the opening in the ring large enough to allow it to slip up the arm to the shoulder; a pad about five inches in length, four in width, and two or three inches thick at the base and considerably thinner at the apex; and a sling or cot for the elbow or forearm made of muslin and in form resembling the half of so much of the sleeve of a coat as covers the forearm and elbow. The stuffed ring is slipped on the sound arm quite over the shoulder, the pad is placed in the axilla of the injured side and kept in place by two tapes one in front and one across the back and tied to the ring over the sound shoulder. Then the forearm of the afflicted side is flexed, the hand carried to the opposite shoulder and the elbows placed in the sling, which is fastened by tapes near the wrist and near the elbow to the ring on the shoulder.

In 1855 Dr. Bartlett introduced a modification of Fox's apparatus by using in place of the wedge-shaped pad in the axilla, a cylindrical pad four or five inches in length and of the diameter required, and this is kept in place by one tape or strap passing through its center, the ends of which are united upon the opposite shoulder.—*C. H. Cleaveland, M. D.*

FRACTURE OF THE SHOULDER-BLADE.

THE Shoulder-blade or Scapula is rarely fractured, except from direct and violent external force. When this accident does occur, it more generally happens that the body of the bone is fractured across, or else that the acromion process (the top of the shoulder,) is fractured, owing to the character of the injury, whether it be directed upon the body or the bone, or upon the point of the shoulder.

When the body of the bone is broken, the part will be painful and swollen; and there will be a stiffness and perhaps an immobility of the corresponding arm. There will be no deformity as the displacement will be trifling, but upon making pressure upon the bone with the flat hand, and imparting a degree of motion to it, the grating sensation or crepitus will at once be perceived.

TREATMENT. This injury must be treated by replacing the fractured parts as nearly exact as possible, and then passing a bandage firmly around

the chest and over the shoulder, so as to prevent motion. The forearm should be placed in a sling which will slightly elevate the shoulder. The parts should be kept very quiet, and any severe inflammation be met with cooling applications, regularity of bowels, &c.

When the fracture is of the acromion process, or that prominence of the end of the bone which articulates or moves with the collar-bone, it may be known by a concavity or flatness of the shoulder, by the pain at the part, and by the collar-bone, together with the broken portion of the process, being drawn forward and somewhat downward by the muscles of the part. If the upper arm be pushed upward, the grating sensation common to fractured bones will be perceived, but not if the arm be merely rotated.

To remedy this, the upper arm must be raised so as to bring the fractured edges in correct contact with each other, which position must be maintained by means of a bandage firmly applied around the arm and the chest, giving several full circular turns in this manner, and then securing the elbow and forearm in a sling, the same as in fracture of the collar-bone. Quiet, &c., are as necessary as in the preceding instance.

FRACTURE OF THE UPPER ARM.

THE Upper Arm or Humerus is more frequently fractured near its central portion, though it may occur in any part of it. It may readily be detected by the patient being unable to raise the elbow or forearm, by the grating sensation perceived, when each part of the bone is taken in the hand and the fractured edges moved freely upon each other, and, if the fracture be oblique, by the shortening of the arm.

TREATMENT. In the treatment of this accident, the elbow should be bent in order to relax the muscles, when an assistant should make slow and careful extension upon the lower portion of the bone, gradually bringing it downward so as to place the ends correctly together, and give to the arm its natural length, holding it thus till all is properly secured by splints and bandages, more particularly when the fracture is an oblique one. A bandage must now be applied, but not tightly, around the arm from the elbow to the shoulder, over which four splints made of thin wood or pasteboard, about an inch and a half wide, should be applied, thus:—The first, in front of the arm, reaching from the shoulder to the bend of the elbow, and around which a few turns of the bandage should be made in order to hold

Fig. 49.



Fractured Arm.

it in place; the second, behind, reaching from the shoulder to the point of the elbow, and around which a few turns of the bandage must also be made; the third, on the inside, reaching from the arm-pit, (but not so high up as to cause excoriation,) to the knob or protuberance inside of the elbow, and around which the bandage must likewise be applied, as in the preceding instances; and then the fourth splint is to be placed on the outside of the arm, reaching from the shoulder to the knob outside of the elbow. The whole is now to be secured by a bandage carefully applied around them, swathing the whole arm from the elbow to the arm-pit;

some recommend tapes or straps as being lighter and cooler than the ban-

dage, as in Fig. 49. The forearm and wrist must be supported in a sling, in a hanging position, being careful that the sling does not elevate the upper arm, but rather permit its weight to resist the contraction of the muscles, and thus serve to keep the edges of the bone in their proper place.

To prevent chafing or excoriation it is a good plan to place some soft substance as raw cotton, under the splints; and the bandages should be applied around them sufficiently tight to support the fractured bone but without interfering with the circulation in the bloodvessels. About the seventh or tenth day, it is proper, in all fractures, to remove the dressings so as to ascertain if the bone be properly placed, so that it may be adjusted if it be found necessary. The splints and bandages should then be reapplied as before, and should be worn four or five weeks; though the arm must not be used for several weeks afterward. A fracture near the center of the bone is much more readily and successfully treated, and with less deformity than when it occurs toward either extremity.

FRACTURE OF THE ELBOW.

THE Elbow, or Olecranon process may be fractured, and detected by the severe pain at the part, or by the patient being able to bend the arm but not to straighten it, by the depression between the broken points, and by the grating sensation perceived when the hand of the affected arm is moved slightly forward and inward, and then slightly backward and outward, one hand of the operator being placed upon the seat of the injury, while the other is employed in making the above movements on the fractured limb.

TREATMENT. In treating this fracture, the limb should be straightened, and, after swelling and inflammation have been reduced, when present, a bandage should be firmly applied to the forearm, commencing from the fingers' ends and continuing it upward to the bend of the elbow. The fractured end must then be brought down into its proper position, and secured in its place by continuing the bandage upward for four or five inches. Secure it at this point, and bring it back again, carrying it above and below the elbow-joint, somewhat in the form of a figure 8, for several times, and then carry it upward bandaging the whole upper arm. A splint, extending from the hand nearly to the shoulder, should now be bound over the inner side of the arm, in order to prevent it from being flexed, which would interfere with the proper union of the bone. Unless the parts be properly secured there will be a disposition for the process to be drawn up by the contraction of the muscles. The joint may be kept moistened with some cooling lotion; and no motion of it should be attempted for three or four weeks.

FRACTURE OF THE FOREAM.

THERE are two bones in the forearm, one called the *ulna*, which passes along the inner side of the arm, extending from the point of the elbow, (where it forms the olecranon process,) to that part of the wrist at the root of the little finger; the other is the shortest and smallest bone, and is called the *radius*. One, or both of these bones may be broken at the same time. When both are broken, the accident is easily ascertained; when only one, its detection becomes more difficult, because the uninjured bone

keeps the injured one pretty nearly in its place. There is generally pain in the fractured part, loss of motion in the hand, and when the limb is grasped firmly above and below the fracture, and the lower part rotated slightly, a grating sensation will be perceived. The finger passed firmly along the bones from the wrist upward will at once detect the fractured part.

Fig. 50.

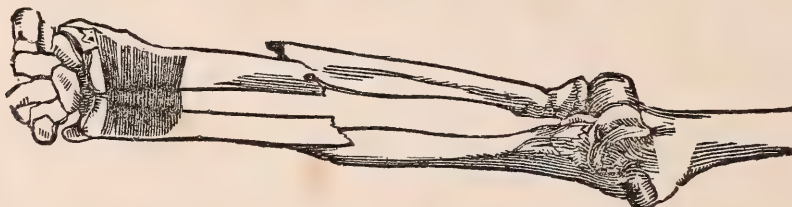


Fig. 51.



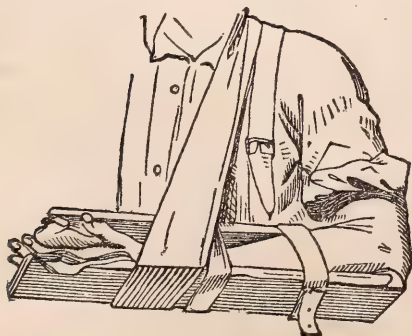
Fig. 52.



Fractured Forearm.

TREATMENT. Whether one or both bones be broken the treatment will be the same. Relax the muscles by bending the elbow, then by extension and counter-extension, place the fractured bones in correct position, and apply two narrow flat splints covered with flannel, thus: one on the inside of the arm reaching from the ends of the fingers in front of the hand, to the inner knob of the elbow, and the other on the outside of the arm, extending from the ends of the fingers, along the back of the hand to the outer knob of the elbow. These splints

Fig. 53.



Fractured Forearm.

must be placed as much as possible between the bones, to keep them separated, and prevent them from rolling on each other. They are to be secured in their place by a bandage firmly applied around the arm, passing from the fingers upward to the elbow. The whole forearm and hand should then be placed in a sling, with the palm toward the chest, and the thumb uppermost. The arm should be kept thus for four or five weeks, being careful not to use it too soon. Instead of a sling, some use a thin board-box made for the purpose, and which is supported by a narrow sling.

FRACTURES OF THE WRIST, HANDS AND FINGERS.

TREATMENT.—In these cases, the bones should be replaced, by extension if necessary, and the parts secured by splints and bandage. If it be a *finger*, several small splints of thin wood or moistened pasteboard should be placed around the finger lengthwise, and secured by a narrow bandage; after which bandage the whole hand and wrist, carrying the bandage up to midway of the forearm. Rest the hand and forearm in a sling.

If the *bones of the hand* be broken, apply a pad or compress to the palm of the hand, then place a broad splint over it, and bandage firmly, and with equal pressure, from the wrist to the fingers. If the *wrist* be the injured part, the splint should be applied to the sides, in front and back, and, together with the bandage, should be carried at least half way along the forearm.

In these accidents, the hand should be carried in a sling for at least four weeks. Should the finger be stiff after removing the dressings, it may be soaked in warm water several times a day, fifteen or twenty minutes each time, and afterward gently bending it forward and backward, as far as can be borne without pain. It is sometimes the case, in these accidents, that portions of broken bone have to be removed, and occasionally the hand will require to be amputated. Severe inflammation is common, and must be met by cooling lotions, opiates, diaphoretics, cooling laxatives, &c.

These are the more ordinary fractures of the arm; sometimes, however, the several bones become fractured in such a manner, and under such circumstances, that it would be improper for any one but a surgeon to attempt their treatment, consequently it would be useless to refer to them in a work like the present.

FRACTURE OF THE RIBS.

ONE, two, or more ribs may be broken from a violent blow or fall, and the injury is more apt to occur behind or at the side, owing, however, to the direction of the force. This accident is accompanied with a difficulty in breathing, and pain or a pricking sensation at the fractured part. If the hand be placed on the part, and pressure be made during a deep inspiration, the grating noise, or crepitus will be observed. Occasionally, however, this noise cannot be detected.

TREATMENT.—The treatment consists in requesting the patient to draw in as deep a breath as possible, and while he is thus holding in the air, a flannel bandage about six or eight inches wide, should be wound rather tightly around the chest, extending from the arm pits to the pit of the stomach, in order to prevent the ribs from moving during respiration, which must be carried on by the diaphragm and the muscles of the abdomen only. It may be proper to remark, that as the bandage is very apt to slip down, it should be secured by sewing the turns together at various parts, as it is being applied, which will be found a much better plan than pinning it, and will also prevent the necessity for its re-application. Before placing on the bandage, observe that the edges of the broken ribs are in their proper place. The patient should be confined to his bed, sitting up occasionally after the fifth or sixth day. In four weeks the bandage may be removed, and a large adhesive plaster be placed over the injured part.

If the lungs or pleura be injured by the fractured bone, there will be a cough, spitting of blood, and inflammatory symptoms, which must be treated

in the same manner as inflammation of the lungs. Emphysema, or any effusion of air into the cellular tissue, puffing up the chest, scalp, eyes, abdomen, &c., must be treated by a physician, who will make incisions as may be required; this symptom is owing to a puncture of the lungs by the broken end of the ribs. When the ribs are fractured on both sides of the chest, no bandage must be used, but the patient must be kept very quiet. The same course must be pursued when the breast-bone is likewise broken.

FRACTURE OF THE BREAST-BONE.

THE breast-bone, or sternum, is rarely broken, except from direct and powerful violence, and is generally accompanied with more or less injury to the chest, and a tendency to severe and dangerous inflammation. It may be known by a depression or elevation at the broken part, difficult breathing, more or less cough, pain, spitting of blood, palpitation of the heart, and an inability to lie on the back. Respiration creates the grating noise, or crepitus, with an unusual mobility of the injured part.

TREATMENT. The treatment consists in lessening the movements of the chest during respiration, by the application of a bandage round the chest, the same as in fracture of the ribs, causing the patient to breathe by the action of the diaphragm and abdominal muscles. If there be a depression at the point of fracture, an incision must be made by a surgeon, who will raise the depressed piece by means of an elevator. Cooling applications to the parts are required, together with a low diet, quiet, and regularity of the bowels. Inflammatory symptoms must be met in the same manner as named under fracture of the ribs.

FRACTURE OF THE THIGH-BONE.

THE thigh-bone may be broken at any part from the knee to the thigh; but the parts most frequently fractured are, near its middle, and at its neck or upper portion, close to the hip joint. The fracture at its middle portion may be transverse or oblique, the latter being more difficult to manage. This accident may be known by the pain, by the limb being unable to move, or bear any weight upon it, and by the usual grating noise when the fractured ends are pressed against each other. If the fracture be a transverse one, the ends will form a prominence, and may pierce a neighboring muscle; if it be oblique, the limb will be shortened, and the prevention of this shortening must always be an important indication in the treatment.

TREATMENT. The patient must be placed on his back, and two strong assistants are to make gentle but sufficiently powerful extension and counter-extension, one drawing downward from the knee, the other holding the limb at its upper part, just below the groin. A folded sheet passed around the groin, instead of the hands, will be the best, as the assistant will have a better purchase, and with less fatigue; pulling upon it in the longitudinal direction of the limb. This extension must be steadily continued for some time, and must be of sufficient force to bring the limb to its natural length, as well as to allow the operator to properly adjust the fractured edges. This accomplished, four splints are to be applied thus: one in front, reaching from the knee pan to the groin; another on the inner side of the limb, from the upper end of the thigh to the inner side of the knee;

a third short one behind ; and a fourth about four inches wide, and extending from the arm pit beyond the sole of the foot. These splints must not be so wide as to touch each other, nor so narrow as to permit the bandage to touch the skin ; and cotton may be placed on their ends, and under them, to protect the skin from injury. The splints having been properly applied, the extension and counter-extension still being maintained, when the fracture is oblique, secure them in their places by a bandage firmly applied, and extending from the foot to the thigh. It is better for several bandages, five or six yards in length, to be used, tacking their ends together as they are wanted. One bandage of the whole length required will be found very inconvenient. The long splint must be secured to the body by strips of bandage passing round it and the body at several points. The bandage being applied, the assistants may cease their traction. It will require six or seven weeks for the bones to unite, during which time the patient will continue to lie upon his back ; but in the mean time the splints and bandages may be removed now and then, and readjusted. If the outer splint is carried upward no further than the hip joint, the limb may rest in a flexed position upon a double inclined plane, which, in some instances, is superior to the first named method. There are several other modes of treating fracture of the thigh bone, but the above course is the best for those who undertake the management of a case when a surgeon cannot be obtained. The object is to put the bones in their proper place, get the limb extended to its natural length, as compared with the uninjured one, and to secure these points, as soon as effected, by a proper application of splints and bandages, without any pain, and as little inconvenience to the patient as possible. The figures show the various modes of dressing fractured thigh. In Fig. 54 no splints are used, the patient resting upon a low bed, and which might answer for a transverse fracture ; Fig. 55 is the treatment with a single long splint and bandage ; Fig. 56 is the double inclined plane upon which the fractured limb may rest.

Fig. 54.

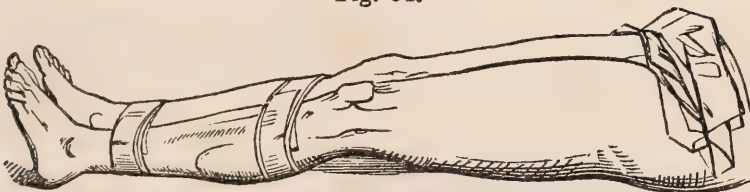


Fig. 55.

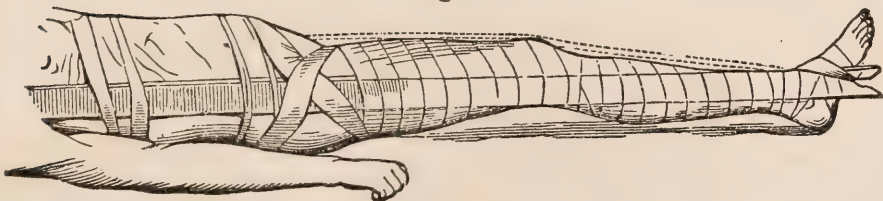
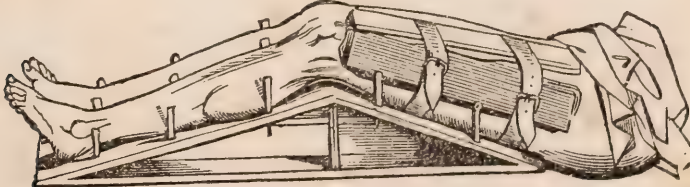


Fig. 56.



Fractured Thigh.

When the NECK OF THE THIGH-BONE is fractured, the knee and foot are

turned *outward* considerably, the limb is an inch or so shorter than its fellow, and may be moved slightly in any direction, but with pain, and generally, but not always, the grating sensation will be observed on extending the leg to its natural length. Old persons are more subject to this accident, though it may occur at any age. A perfect bony reunion is seldom effected, the union being generally ligamentous.

The TREATMENT consists in, first allaying inflammation, then straightening the limb so as to bring the fractured edges together properly, if possible, and preserve the natural length of the leg. A long splint passing up into the arm pit and extending downward beyond the sole of the foot, must be applied, and the bandage employed in the same manner as in the preceding case of fracture at the center of the thigh-bone; securing the upper part of the splint to the body also, in a similar manner. The limb must be kept extended; the foot and ankle must be firmly attached to their fellows on the opposite leg, by means of a bandage, keeping both limbs straight and immovable; a broad leathern strap should be firmly buckled around the hips and upper part of the thigh-bone; and the patient must be kept thus for several weeks, before attempting to get up, which he should not be allowed to do if the attempt cause much pain. The effort of raising and particularly of walking must be made with great care, and very gradually. It is very possible that upon recovery, the limb will be shortened, for this frequently happens even under the care of the most skilful surgeons. If the bone unites it will require two, three, or even more months, for its perfect union.

FRACTURE OF THE KNEE-PAN.

THE knee-pan or patella is occasionally broken *longitudinally*, the result of direct violence; more commonly, however, the fracture is *transverse*, occasioned by some sudden muscular action, as in the effort made to protect one's self from a fall, or a false step upon stairs, &c. Unless exceedingly well treated, these fractures are apt to cause a stiff joint; and it is very seldom the bones unite by the formation of bony matter, but more generally by ligamentous. Bony union is more common in those cases where the fractured edges are kept in close and proper contact with each other; the slightest separation disposes to a ligamentous union.

Transverse fracture of the knee-pan may be known by the inability of the person to stand upon the injured limb; by the incapability of extending the leg, though it may be easily flexed; by the upper portion of the broken knee-pan being drawn upward, leaving a wide depression or pit at the point where the knee-cap should be, in which the fingers may frequently be laid, and above and below which will be felt the fractured edges of the movable bones. Soon after the accident, the parts become livid from extravasation, but this is removed in a few days by absorption, and inflammation is apt to be present.

TREATMENT. Should there be much inflammation, it must first be reduced by the application of Tincture of Arnica, cooling lotions, and if necessary, leeches. In case of much swelling and inflammation, and where the bones are widely separated, they may be brought nearly in contact, and retained so by bandages, continuing the above measures to reduce the inflammation, &c. In a day or two, or as soon as the inflammation and swelling have subsided, place the limb on an inclined plane having an elevation of about two feet, which will cause the thigh to be flexed upon the abdomen,

straighten the knee, and relax the muscles. Then, having applied a bandage around the thigh from the groin to within about five or six inches above the knee, bring the fractured edges together, in as close contact as possible, and continue the bandage in the form of figure 8, both above and below the knee-pan, in order to keep the broken bones in close approximation. The bandage must be sufficiently tight around the limb to prevent the upper portion of the knee-pan from slipping under it; and should be examined daily to ascertain that it is firmly secured, and of the necessary tightness. In about seven or eight days after the accident, it is a good plan to fasten a strap or handkerchief tightly around the leg, immediately above the knee, and another in the same manner directly below the knee, then by means of a stout piece of tape or riband, passed through or beneath each handkerchief, one on each side of the knee, the circular bandages thus made may be drawn toward each other, and which will at the same time, bring the fractured edges of the bone together; after drawing the ends of the tape to the extent required, they must be tied. To prevent any motion of or bending at the knee-joint, a wide splint may be attached and secured by tapes to the under part of the leg, extending from the ham to the heel.

If no inflammation ensues after the application of the bandage, it should not be removed for twelve or fourteen days; after which the limb may be moderately flexed, carefully repeating it every other day, in order that the patient may not have a stiff joint. When the parts have united with sufficient firmness, the patient may be seated upon a table in such a manner that the lower leg will hang over it, so that he can swing it carefully to and fro, until he can raise it on a level with his thigh. Of course this measure is applicable only in those instances in which the joint is disposed to stiffness, and where the patient loses the command over the motions of the limb. By carefully proceeding in this manner, the motion of the joint will be preserved; and the support of the weight of the body, as well as the attempt to walk, must be made with much caution. The great difficulty in these cases is, to keep the bones in close approximation, and to secure motion to the joint after union has been effected.

Longitudinal fracture of the knee-pan will present somewhat similar symptoms to the above, with the exception that the broken bones are not so widely separated by the action of the muscles. It may be treated by bringing the fractured edges together, placing a straight splint behind the knee joint to prevent its motion, and retaining the splint in its place, as well as maintaining the contact of the fractured edges, by carefully bandaging the parts. In other respects pursue the same measures, if required, as in the preceding instance.

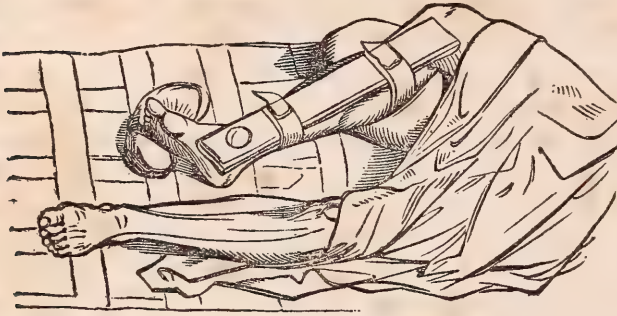
FRACTURE OF THE LEG.

THE leg, or that part between the knee and ankle and sometimes called the lower leg, has two bones in it; one the smaller bone, situated toward the outer part of the leg, and called the *fibula*, or splinter-bone, and which cannot be readily felt, except near the ankle, on account of the flesh covering it. The other, situated on the inner side of the fibula, is called the *tibia*, or shin-bone; its front edge is known as the shin, and can be distinctly traced by the finger from the ankle to the knee. One or both of these bones may be broken at the same time; more frequently the latter. When both bones are fractured, there is pain, an inability to walk or bear upon the limb, a change in its shape and direction, a mobility of the limb and the

peculiar grating sensation on rubbing the fractured edges together. By passing the finger along the shin-bone a projection will be felt at the injured part.

TREATMENT. The treatment consists in first reducing the swelling and inflammation; then, probably in from two to four days, or immediately, if there have not been any considerable amount of inflammation, by means of

Fig. 57.



Fractured Leg.

extension and counter-extension, properly adapt the fractured edges together, apply two splints, one on the outside of the leg extending from the knee to the sole of the foot; the other on the inside of the leg, and secure the whole by means of a bandage firmly applied, and extending from the toes to the knee. Some prefer straps or tapes to the bandages as

in Fig 57. The extension and counter-extension should be continue until the bandage has been applied and secured, especially in cases of an oblique fracture, where there is a tendency for the broken edges to slide by each other. The splints used, should be about three inches wide, and should have a circular opening made in them at the part which will come against the ankle. The leg may rest on its side upon a pillow, with the knee a little bent, which is the easiest position, being careful that the great toe is kept in a direct line with the inner edge of the knee-pan. To ascertain that the limb is of the right length, it should be measured and compared with its fellow. The heel should be supported by a pad or cushion, and the foot instead of being allowed to hang down, must be brought up to nearly a right angle with the limb by a bandage passing over the ball of the foot and then attached to a point near the knee; or, a box may be made, the lower partition of which is so arranged as to support the heel, as well as to give the proper degree of flexion to the foot. In five or six weeks the dressing may be removed; but the patient should gradually accustom the limb to bear his weight; at first walking with crutches. In six or seven days after the accident, it is always proper to remove the dressing, to ascertain that the parts are in proper position, and if not, they must be brought into correct proximity, after which the dressing must be readjusted.

When the fibula alone is broken, it is not always that even a surgeon can positively ascertain it; but this is of little consequence. There will be pain and tenderness on moving the limb, or on attempting to walk or stand, sometimes a grating sensation will be perceived, and the foot will frequently turn outwardly. In this accident, the shin bone supports the other in its place, acting as a splint, and preserving the figure of the leg. All the **TREATMENT** required is, a state of quiet in the recumbent posture; and, in some few instances, the limb may need the same management as when both bones are broken.

When the shin bone alone is broken, it may be ascertained by the irregularity or projection at the injured part, a mobility of the bone at that place, and crepitus or the grating noise. Although a surgeon may treat this fracture without splints or bandage, non-medical persons will do best by pursuing the course laid down for a fracture of both bones.

FRACTURE OF THE BONES OF THE FOOT.

THESE injuries require a TREATMENT similar to that pursued in fracture of the bones of the hand, and finger bones. It may be proper to state that fractures of the lower extremities are usually more serious in their nature than those of the upper, being more troublesome in their treatment, often requiring amputation of a part of the limb, and sometimes occasioning the death of the patient by lockjaw or otherwise. In old as well as in intemperate persons they are generally more troublesome and dangerous than among the young, and temperate.

Fractures may occur at other places, than those referred to, or the bones of the limbs may be fractured near their ends or joints; these accidents cannot be managed with any degree of comfort or security to the patient by any other than a properly educated medical man. Consequently, I have omitted any notice of their treatment.

DISLOCATIONS.

WHEN a bone is removed from its socket by force or otherwise, it is said to be "put out of joint," or dislocated; the term *luxated* is also applied to this accident. When the bone is merely displaced, it is termed a *simple* dislocation; when the neighboring soft parts are injured in addition it is called a *compound* dislocation, and is the more serious form of dislocation. When the bone is returned to its proper place it is said to have been *reduced*.

The *symptoms* of a dislocation are frequently very obscure, owing to the great amount of swelling accompanying it, and the most experienced surgeon is often at a loss to discover the true character of the injury. The ordinary symptoms are, pain and inability to move the limb, the limb is longer or shorter than the other, an unnatural prominence or depression may be felt at the joint, which may be ascertained by a careful comparison of the parts around the joint, with those of the opposite uninjured joint, and, in some instances, by rotating the dislocated limb, the head of the bone will be felt out of its place. Some dislocations, as of the jaw and shoulder, are very apt to recur at various times, after having been once produced.

The sooner a dislocated bone is replaced or reduced, after the accident, the more easily can this be effected; and the difficulty of reduction is in proportion to the time which has been permitted to elapse after the reception of the injury. When there has been a long delay in "setting the bone" various changes will occur in the part, which will interfere with its reduction, the bone and soft parts accommodate themselves to the change of position, and a new but unnatural socket will be formed for the head of the bone to move in. Replacement has been accomplished, but with great pain to the patient, and difficulty to the operator, even after the expiration of three or four weeks; but this is only to be attempted by a skilful and experienced surgeon. The greatest obstacle to contend with in dislocations is, the powerful, rigid, involuntary contractions of the muscles, which increase with time as the reduction is delayed, and which is overcome by extension and counter-extension, as in fractures, in some cases assisted by internal relaxing medicines.

Partial dislocations should be closely examined; they are frequently treated as sprains or bruises, leaving the patient lame for life.

Sometimes a fracture and dislocation occur at the same time; in such cases it is "best to reduce the dislocation at once, taking care that the fractured part be strongly bandaged in splints to prevent any injury being done

to the muscles: for if this be not done, at first, it cannot afterward, without, in all probability, disuniting the fracture." These cases can be managed only by a medical man.

When dislocations are caused by diseases of the joint or its appendages, paralyzed muscles, relaxation of the ligaments, destruction of the cartilages, ligaments, &c., from disease, they are less easily reduced than when occasioned by external violence, as falls, blows, and the like; and, in some instances, reduction becomes impossible. A delay in reducing a dislocation is followed by an effusion of synovial fluid, an adhesive matter, into the surrounding parts; or, an adhesion of the tissues may take place, giving rise to a crackling noise, somewhat like that of crepitus, on moving the joint. Occasionally the inflammation caused by the accident is followed by gangrene.

TREATMENT. Having ascertained that a dislocation exists, it must be reduced as speedily as possible; inflammation must be kept down by local cooling applications, and the other appropriate measures referred to under the head of Fractures; and means must be pursued to retain the bone in its place until the surrounding parts recover their wonted strength.

To "set" or reduce the dislocation, that is, to place the bone into its natural socket, extension and counter-extension must be made to overcome the powerful contractions of the neighboring muscles, and which may be made by the hands alone, or with the aid of towels, sheets, ligatures, &c. The limb must be bent, which also aids in the relaxation of the muscles, and the force applied must be gentle and continued, and gradually increased as may be necessary; any sudden or powerful force will be productive of permanent or serious evil. The most powerful muscles may be wearied out and relaxed by gradual, long-continued and unremitting extension. As soon as the head of the dislocated bone has been brought to a level with its socket, the muscles will generally carry it into its proper place; this usually takes place suddenly, is accompanied with a loud cracking noise, and is followed by a material diminution of pain. The attempts to reduce the dislocation, even when made with a sufficient

Fig. 58.

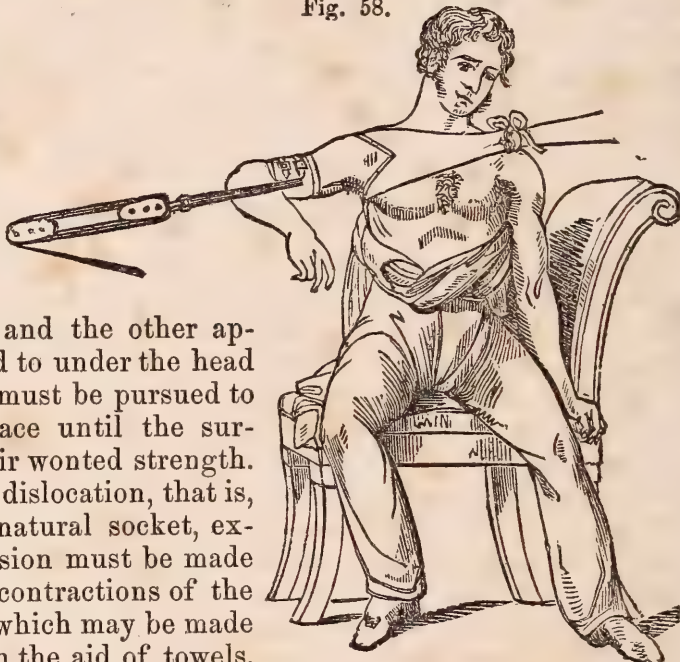
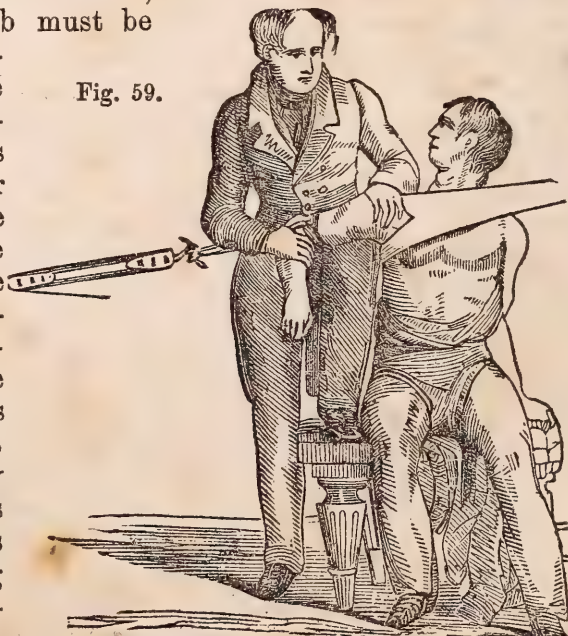


Fig. 59.



These figures exhibit extension and counter-extension, as frequently practised in Dislocations of the Shoulder.

degree of extension, may fail, unless the bone in which the socket is placed, be kept fixed and motionless by counter-extension, exerting a force equal to that employed in extension, but in a directly opposite line.

It is sometimes the case that before the muscles will yield, the assistants become "tired out," and, in other instances, the muscles resist all the efforts made to relax them. When this occurs, constitutional remedies must be given in order to produce a general relaxation of the system. Nauseating doses of the Tincture of Lobelia may be given; or the Compound Tincture of Lobelia and Capsicum. The Spirit vapor bath will likewise be found useful in some cases, either alone or combined with the internal use of some preparation of Lobelia. Care must be taken not to cause vomiting, as this will interfere with the attempts at relaxation. As soon as a sufficient degree of muscular relaxation is established, then the above mechanical means for the reduction of the bone must be undertaken.

After the dislocation has been reduced, means must be taken to prevent a return of the accident, which is best accomplished by keeping the limb very quiet, and in a partially flexed position; sometimes, however, bandages, and even splints, will be required for a time, until the parts have recovered their tone.

Pain and inflammatory symptoms may be lessened by cooling applications or anodyne lotions, Seidlitz Powders as a laxative, and anodynes internally. The patient must be very careful in the use of the limb for some time afterward; if the joint be moved too early, it is apt to be destroyed by ulceration.

By *passive motion* is meant the gradual bending and straightening of a joint, repeated once or several times daily, in order to prevent ankylosis or permanent stiffness of the joint. This motion is usually given to a joint some three or six weeks after its reduction, before allowing the patient to use it. In the examination of all dislocations, as well as after their reduction, compare the parts with the opposite sound parts, or with similar parts on another person..

COMPOUND DISLOCATIONS are often attended with much danger, being followed by severe febrile symptoms, gangrene, delirium, and death; which, however, may be prevented by amputating the injured limb. This, however, is not always necessary, as a careful, judicious course of treatment will frequently result in benefit, even in apparently hopeless cases. In old persons, and persons of unhealthy, irritable constitutions, compound dislocations are apt to have a fatal termination.

TREATMENT. The first thing to be done in this class of accidents is, to check bleeding, should any be present, and then to cleanse the wound from any pieces of broken bone, dirt, or foreign matters. This accomplished, as gently and as soon as possible, reduce the dislocation, then bring the edges of the wound together, and secure them thus by strips of adhesive plaster, and in some instances, compresses and bandages will be likewise required. The limb must rest quiet, and be kept constantly moistened by the application of cold water, or some cooling lotion, but no poultices must be used, as they interfere with the adhesive inflammatory process, and tend to produce the formation of matter, which is to be avoided as much as possible. Any febrile or inflammatory symptoms must be met by laxative doses of Seidlitz Powder, and the usual internal means recommended in inflammatory affections, meeting the various symptoms as they present, according to their indications. The Tincture of Gelsemium, given in doses to produce its peculiar relaxing effects, will be found very valuable in overcoming the more severe inflammatory symptoms attending compound dislocations. See Compound Fractures, page 558.

I will now refer to a few particular dislocations, observing here, however, that no attempt should be made to reduce a dislocation by a non-medical-man, when it is possible to secure the attendance of a physician.

DISLOCATION OF THE LOWER JAW.

Fig. 60.



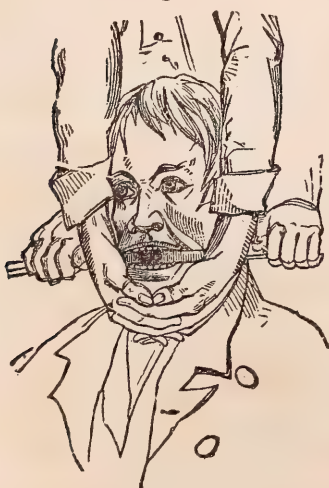
Dislocation of the Jaw.

seat; the operator standing in front will place his thumbs as far back on each side of the lower jaw as he can well reach, or if the back molar teeth are present, the thumbs may be placed upon them, and firm but gradual

The lower jaw is dislocated forward and downward, and is commonly occasioned by gaping. One or both sides of the jaw may be dislocated, that is, the dislocation may be partial or complete. The dislocation may be known by the mouth being wide open, the chin thrown forward and downward, the patient is unable to close the mouth, and any efforts to accomplish this by pressure are painful and useless; the saliva is much increased in quantity, and dribbles over the mouth. In partial dislocation, when but one side of the jaw is dislocated, the mouth is not so widely opened as in the complete dislocation, and the face has a twisted appearance owing to the chin being thrown to the opposite side of the dislocation.

TREATMENT. The reduction of this dislocation is easily effected. The patient must be seated on the floor, or on a low seat; the operator standing in front will place his thumbs as far back on each side of the lower jaw as he can well reach, or if the back molar teeth are present, the thumbs may be placed upon them, and firm but gradual pressure must be made downwards, while the fingers of the operator, or an assistant standing behind the patient, elevates the chin, also, gradually. As soon as the ends of the jaw become disengaged from their situation, the muscles draw them suddenly and powerfully into their proper position, and if the operator does not immediately remove his thumbs outward between the jaw and cheek, they may be severely bitten. It is always proper to protect the thumbs still further, by covering them with a silk handkerchief, or strip of linen. Sometimes, two pieces of wood, a couple of knife handles, or cork are used as substitutes for the thumbs, being placed one on each side of the jaw between the back teeth, when the chin is gradually but firmly drawn upward. If but one side of the jaw is dislocated, that side only should be operated upon.

Fig. 61.



Dislocated Jaw.

After reducing the dislocation, the jaw should be kept bandaged for a few days, passing the bandage once or twice round the top of the head and under the chin, and no food should be used which will require chewing or motion of the jaws. When the jaws have once been dislocated, they are more liable to subsequent repetitions of the accident; hence, the patient should be careful not to laugh or gape too widely.

DISLOCATION OF THE COLLAR-BONE.

THE Collar-Bone or Clavicle is more liable to be broken than dislocated; but it may be displaced at either end, more commonly at its junction with the breast-bone, and the end of the bone may be thrown backward, or, usually, forward. The dislocation *backward* leaves a depression at the upper part of the breast-bone, while the end of the bone will feel like a tumor at the root of the neck, and there may also be difficulty of swallowing. The *forward* displacement is recognized by the swelling made on the upper part of the breast-bone by the projecting end of the dislocated bone, and if the knee be pressed against the back and the shoulders be drawn backward, this swelling disappears, but returns again as soon as the extension is removed. If the shoulder be raised, the swelling descends; if it be drawn downward, the protuberance ascends toward the neck. There is great pain and difficulty in moving the shoulder.

TREATMENT. In reducing the *forward* displacement the shoulder must be pulled backward and outward, which will cause the collar-bone to take its proper position with the breast-bone; then press the collar-bone into its place, and retain it there by a pad or compress, and a bandage applied around the chest, the same as recommended in fracture of the collar-bone. (See page 560.) The arm should be raised high in a short sling, and the patient must be kept quiet for at least three weeks, and the dressings must not be removed too soon. The great difficulty in these dislocations of the collar-bone is to retain the head of the bone in its place after its reduction, and which can only be accomplished by the pad, bandage, and sling being carefully and properly applied. Generally, notwithstanding the ability of the surgeon, there will be more or less deformity of the part, but which will be productive of no serious inconvenience.

Frequently, from a fall upon the shoulder, the collar-bone becomes dislocated at its *junction with the shoulder-blade*, or scapula. In this luxation the shoulder will be depressed and drawn inward toward the breast-bone, and the end of the collar-bone may be felt projecting at the top of the shoulder. To reduce this luxation, place a knee between the patient's shoulders, and draw them backward and outward, until the collar-bone is brought into its place; then put a thick pad or cushion into each armpit to keep the shoulder-blade from the side, and to raise it, and then apply the bandage as in the former instance, supporting the forearm in a short sling, so as to keep the shoulder-blade well up. The same difficulties and results may follow this accident, as in the previous one.

DISLOCATION OF THE SHOULDER.

THE upper end of the humerus or upper arm, may be dislocated by falling on the elbow, suddenly jerking up the elbow, and by the careless practice which inconsiderate persons have of jerking a child from off its feet, and swinging him round in a circle, or by jerking him over a gutter, &c., while holding him by the hand. In these dislocations the head of the bone will be forced from its socket, and may take four different directions; the first and most common one, is where the head of the bone is driven *inward* and *downward* into the armpit; the second, where it is thrown *forward* beneath the collar-bone upon the second rib; the third where it is thrown *backward* on the posterior surface of the shoulder-blade, just beneath the spine; and the fourth, where the head of the bone is thrown *forward* and

inward on the coracoid process, a short, thick, bony eminence, situated at the front part of the upper margin of the shoulder-blade, forming an incomplete or partial dislocation.

When the head of the bone is thrown into the *armpit*, the arm is somewhat longer than the other, and the elbow is carried from the side; the natural rotundity of the shoulder is lost, and the patient cannot raise his arm nor extend it outwardly; there is considerable pain, and the patient usually keeps the forearm bent, supporting the arm with the other hand. Not unfrequently the fingers experience a sensation of numbness. If the elbow be carried outward, nearly at right angles with the body, the head of the bone can be distinctly felt in the armpit or axilla. An attempt to carry the elbow toward the side causes great pain.

TREATMENT. To reduce this dislocation, various modes have been devised, but the best for ordinary purposes is the following: The patient is placed on his back upon the floor, and the operator, having removed his shoe, also places himself upon the floor, but in a directly opposite position. A folded towel is placed in the armpit of the patient, and the operator puts his heel upon it, between the arm and the chest, using the left foot if the left shoulder be dislocated, and the right, if the right shoulder. The forearm being bent, the operator seizes the arm above the elbow with his hands, or a towel may be fastened around the arm at that point, and keeping the heel in the armpit, he makes a steady pull in a line toward himself, increasing the force gradually, and in five or six minutes the bone returns into its place with a loud snap. (In Fig. 62 the mode advised is seen, but the engraver has not shown the forearm bent as recommended.)

Fig. 62.



Dislocated Arm.

If, while the operator is pulling, he requests the patient to slightly change his position, or anything else to divert his attention for the time, and then at that moment adroitly pulls a little more vigorously, he will succeed in more quickly effecting the reduction. But when this cannot be done, and the operator requires more force than he is able to give, the towel may be lengthened, so that two or three persons may take hold and aid in giving the desired amount of force gradually and steadily, the heel being still kept in the axilla. When the arm has been once dislocated, it is very liable to subsequent dislocations from the slightest causes, even in the act of putting on the coat. After its reduction, it will be well to carry the arm in a sling and allow it to rest for three or four weeks, that the neighboring parts may recover their tone. In some cases it may be necessary to nauseate the patient with *Lobelia* before the muscles will readily yield. Long standing dislocations require the aid of a skilful surgeon.

When the head of a bone is thrown *upon the second rib, beneath the collar-bone*, it may be known by the great prominence at the point of the shoulder, the depression or hollow beneath it being more considerable, and there

is less pain than in the previous instance ; the elbow is thrown from the side and backward ; the arm is shortened, and the head of the bone may be felt to roll below the central part of the collar-bone, when the arm is rotated. The difficulty of moving the arm is greater than in the preceding case.

The reduction of this form of dislocation is to be effected in the same manner as in the previous instance, with the exception that the heel of the operator must be placed nearer toward the front part of the arm pit, and the pulling or extension must be made at first *obliquely downward and backward*, and, after a few minutes, the arm may be raised in a *horizontal* direction, but without relaxing any of the force employed in the extension. Keep the arm afterward in a sling, the same as recommended when a dislocation into the arm pit has been reduced.

When the head of the bone is thrown *backward* on the posterior surface of the shoulder blade, it may be known by the prominent tumor at that place, which turns as the arm is rotated ; by the arm and forearm being close to and across the chest, together with the other signs common to dislocation of this joint. The dislocation is reduced by the same means as in the first instance, making the extension in the same direction, being careful, however, to rotate the head of the bone *inward*.

When the head of the bone is thrown against the *coracoid process* there is a hollow at the back part of the shoulder joint, the axis of the arm is thrown inward and forward, and the arm cannot be raised, together with pain, &c. This luxation is *reduced* in the same manner as that in which the head of the bone is thrown forward upon the second rib, being careful, however, to draw the shoulders backward, that the head of the bone may pass into its socket. After the reduction, secure the shoulders by the bandage named in fracture of the collar-bone, or the bones will be apt to again slip out.

DISLOCATION OF THE ELBOW JOINT.

THE most common dislocation at the elbow joint, is that in which both bones of the forearm are thrown backward and upward. The point of the elbow is more prominent than usual ; on each side of the elbow there is a hollow place ; the hand and forearm are carried outward, so that the palm of the hand is turned upward, and cannot be restored to its natural position ; and the elbow joint is slightly flexed, but cannot be moved. This accident usually happens by a person, in falling, throwing out his hands to save himself.

TREATMENT. To *reduce* this luxation, seat the patient on a chair, take hold of his wrist, and put your knee on the inner side of the elbow-joint, then bend the forearm, and, at the same time, press the knee on the dislocated bones of the forearm, so as to separate them from the end of the upper arm, and allow them to pass into their proper situation. While this pressure is being made with the knee, the arm is to be forcibly but gradually bent, and the bones will slip into their places. After the reduction, keep the arm fixed in a bent position, and apply a bandage, which should be kept wet with some cooling lotion. The forearm should be bent at rather less than a right angle with the upper arm, and supported in a sling lying across the abdomen. After eight or ten days, the joint must be carefully and gradually moved, in order to prevent it from becoming permanently fixed and immovable, and the motion should be increased daily. The joint should not be used otherwise for six or seven weeks. Any other forms of dislocation of the shoulder joint may be treated in the same manner.

DISLOCATION OF THE WRIST.

THE wrist becomes occasionally dislocated, and may be known by the pain, the hand being changed in its situation, the relations of the bones to each other becoming also changed, together with swelling on the fore part and back part of the hand. In sprains of the wrist there is but one swelling, and that comes on gradually.

TREATMENT. In the *reduction* of this luxation, full extension is all that will be necessary, as the muscles will direct the bones into their proper situation. Grasp the patient's hand with your right, and support his forearm with your left hand; then let an assistant place his hands firmly around the arm just above the elbow, and if both parties now make extension, the bones will soon be replaced. As soon as this is effected, place a

Fig. 63.



Dislocated Wrist.

compress over the part, apply splints before and behind the forearm, extending to the fingers' ends, and bandage from the fingers to the elbow. Keep down pain and inflammation by cooling applications, and support the hand and forearm in a sling.

DISLOCATIONS OF THE FINGERS AND TOES,

ARE to be treated upon similar principles. Extension must be made by means of a tape or bandage fastened to their lower end; and when sufficient extension is made, the muscles will carry the bones into their proper places. Rest and quiet to the parts, will be necessary for some time, and in twelve or fourteen days, passive motion should be given to the joints to prevent permanent stiffness. Dislocation of the *thumb* is often very difficult to reduce, but may be frequently accomplished by first soaking it in a warm infusion of Lobelia, for half an hour or so, and afterward employing a steady, continued, and powerful extending force, while, at the same time, the dislocated bone is firmly pressed upon, to push it into its place. Sometimes, it may become necessary to amputate the thumb.

DISLOCATION OF THE HIP JOINT.

THE hip joint or head of the thigh-bone, may be dislocated in four directions, viz:

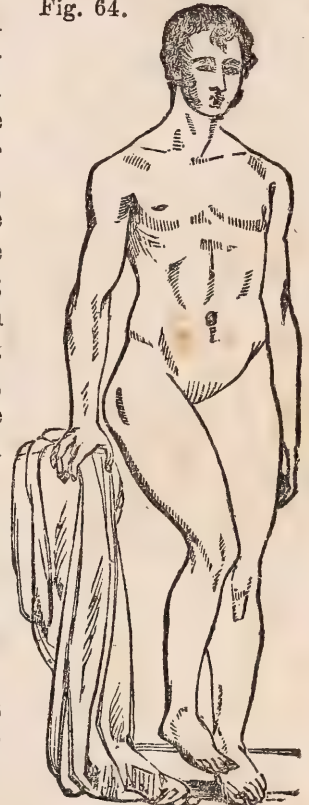
1. The head of the thigh-bone is thrown upward on the back part of the haunch-bone, where it may be felt by rotating the limb inward; the symptoms are,—the leg is shorter than its fellow by about two inches; the knee and foot are turned inward, and the foot lies over the opposite foot, the ball of the great toe being toward the opposite instep; any attempt to turn the leg outward, produces great pain; there is likewise, as in all these dislocations, lameness, diminution of motion in the limb, pain, swelling, &c.

Care must be taken not to confound this dislocation with a fracture of the neck of the thigh-bone.

TREATMENT. To *reduce* this dislocation, various means have been employed and recommended; but I shall describe only such as may be used by non-medical persons with the greatest chance of success. First, place the patient upon his opposite or uninjured side, upon a bed or table, and, if necessary, produce muscular relaxation by the means heretofore named; then pass a sheet or strong towel inside of the thigh, between the fork of the leg and the dislocated thigh, and fasten the end of this to some point behind the patient, which will not yield to the force applied in the opposite direction; this is the counter-extending apparatus. Then apply a towel or strap around the limb, just above the knee, having it sufficiently long and strong for five or six stout men to take hold of, and make extension, pulling the limb downward, and a little across the other leg, just above the knee. The extending force must be given with care, and be gradually increased; and both the extension and counter-extension, though in opposite directions, must be in the same line. When the muscles have been sufficiently elongated, and the limb brought to a level with the edge of the socket, the bone will usually return to its place with a snap. Or, should it not do so, the limb may be gently rotated inward; and if this fails, a strong towel, or even the arm of the operator, should be passed round the thigh, high up toward the body, and the head of the bone be lifted by it over the edge of the socket.

The counter-extending sheet or strap must be so placed between the thigh and fork of the leg, as not to cause an injury to the parts of generation in either the male or female; and in making the extending force, when great pain is complained of, the assistants may stop for a few moments, and then renew the

Fig. 64.



Upward Dislocation of Thigh-bone.

Fig. 65.



Reduction of Upward Dislocation of Thigh Bone.

pulling, but in no case must they relax the force, to lose what they have already gained, until the head of the bone passes into the socket, and which may be known by the snap which happens at that time.

In this, as well as in all dislocations of the hip joint, after the reduction, the patient should be kept in bed for two or three weeks, and the limbs

should be kept parallel with each other, by means of a bandage passed around both, and extending nearly to the knees; because it may happen that, from a trifling cause, even that of removing the patient to the bed, the dislocation may again occur,—the neighboring muscles being at this time much relaxed. Pain and inflammation must be kept down by the means heretofore named; and previous to permitting the use of the limb, a passive motion should be given to it, for several days, five or six times each day, gently and carefully flexing the joint upward and downward.

Fig. 66

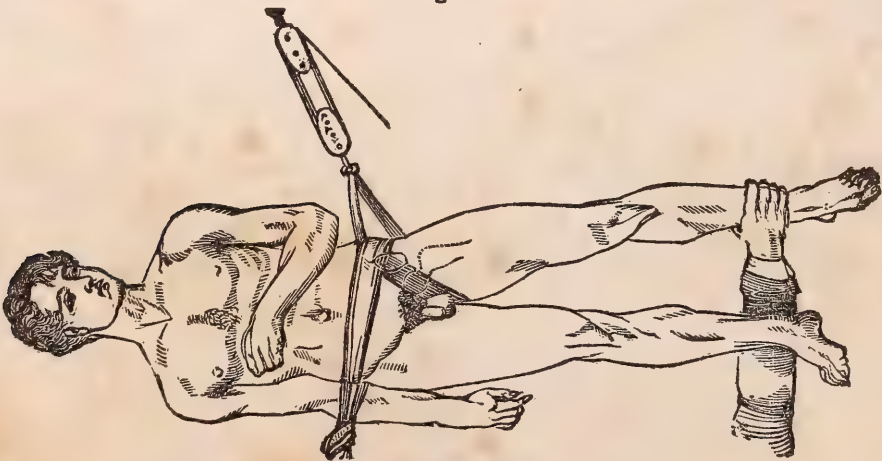


Downward Dislocation of Thigh-bone.

2. The SECOND DISLOCATION is downward, the head of the thigh bone being thrown into a large opening in the lower part of the haunch-bone, called the Obturator Foramen. The leg is about two inches longer than its fellow, the knee is widely separated from the other one, on attempting to stand the body is thrown forward, the toes of the foot point to the ground, though the foot may be outward, inward, or straight; the prominence on the outside of the hip-joint is considerably less than that of the other side, and by making pressure upon the upper and inner part of the thigh, the head of the bone can be felt, more especially in thin persons.

TREATMENT. To reduce this dislocation, place the patient upon his back, separate the thighs as widely as possible, then pass a girth or towel around and inside of the injured thigh, to which the force is to be applied. Pass another girth around the lower and outside part of the haunch-bone, just above or over the hip joint, and fasten this to some fixed and unyielding point, in order to prevent the lower part of the body from moving as the thigh is moved. Force is now to be carefully and gradually made with the first girth in a direction outward and obliquely upward, or transversely and outward from the injured side, at an angle of about 115° , 120° , or 125° , with the dislocated hip, and as the head of the bone begins to rise, the operator will seize the limb by the ankle, and gently but firmly draw it toward the other, which will cause the bone to slip into its socket with a snap. In this dislocation, no extension is re-

Fig. 67.



Reduction of Downward Dislocation of Thigh Bone.

quired, or if any, it must be very slight. The subsequent treatment will be the same as in the previous case. The girth which is fastened firmly to prevent the body from moving, must also be so placed as to form an angle of 100° , 110° , or 120° , with the sound hip, its resistance to the force used, being made transversely at this angle, and not in a directly opposite line with the traction.

It may be proper to state here, that in all these dislocations, a great amount of force is frequently necessary, so much so, that large drops of sweat will stand on the forehead of the operator and assistants, even before the reduction has been effected.

3. The **THIRD DISLOCATION** is backward, into a cavity called the Sciatic Notch; this dislocation is very difficult to detect, as well as to reduce. The limb is slightly shorter than natural, the knee and foot are turned inward, not so much, however, as in the first dislocation, and the toe rests against the ball of the great toe of the opposite foot; on standing, the toes reach the floor, but not so the heel; the limb is fixed so that it is almost impossible to rotate or flex it. The head of the thigh-bone is not readily felt, perhaps not at all.

TREATMENT. To *reduce* this accident, place the patient in the same manner as in the first dislocation; make the extension in a line across the middle of the sound thigh, and at the same time raise the head of the dislocated bone out of its position and across the edge of its socket, by means of a napkin or strap passed round and beneath the upper part of the thigh, the other end being carried over the shoulders of an assistant, who, resting both hands on the haunch-bone, raises his body gently, and with it the thigh-bone. The subsequent treatment will be the same as in the preceding cases.

Fig. 68.



Backward Dislocation of Thigh-bone.

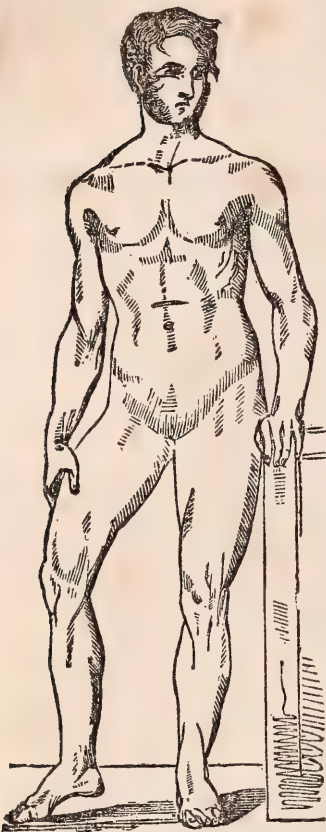
Fig. 69.



Reduction of Backward Dislocation of Thigh Bone.

4. In the **FOURTH DISLOCATION** the head of the thigh-bone is thrown upward and inward, in front of the share-bone or pubic bone. The limb is

Fig. 70.



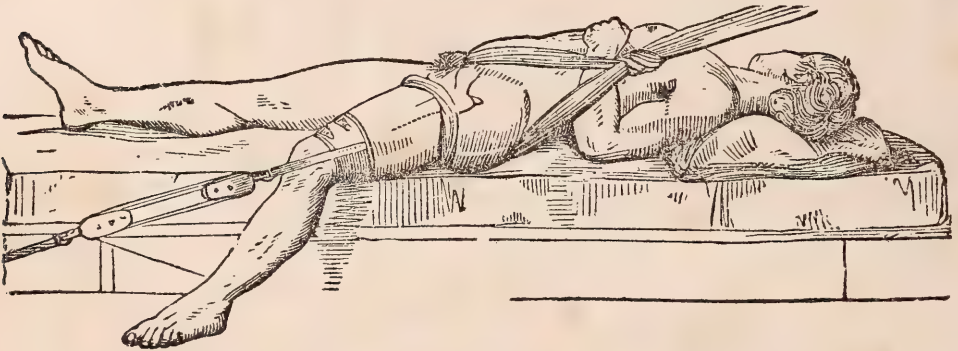
Forward Dislocation of Thigh-bone.

about an inch shorter than its fellow; the knee and foot are turned outward, and cannot be rotated inward; and the head of the bone can be felt like a hard ball at the groin, moving when the knee is rotated or the thigh bent.

TREATMENT. To *reduce* this luxation, place the patient upon his sound side, and apply the counter-extending fixture, the same as in the first dislocation, with the exception that the strap or sheet must be carried in *front* of the patient's body, and fixed to a firm, unyielding point, as a staple driven in a wall, or a post, &c. Extension is then to be made in the same manner as in the first dislocation, but its direction must be such, that the limb will be drawn backward and slightly outward; and at the same time, the head of the bone must be lifted over the pubic bone and edge of the socket, by means of a napkin passed under the upper part of the thigh, the same as in the third dislocation, remembering that, as the patient lies upon his side, the head of the bone must be lifted upward, and a little forward. The subsequent treatment will be the same as in the preceding instances.

Sometimes dislocations of the thigh-bone may be reduced by pursuing the plan recommended for dislocation of the upper arm into the armpit. The patient is placed on his back upon the floor, and the operator having removed his shoe, also places

Fig. 71.



Reduction of Forward Dislocation of Thigh-bone.

himself on the floor, but in an opposite position. While assistants hold the hips of the patient, the operator presses his foot close up to the fork, which must be protected with a folded towel, and grasping the ankle of the dislocated limb with both hands, he pulls downward for a time; then engages the patient's attention by requesting him to change his position a little, when, with a more vigorous pull, the bone passes into its socket with a snap.

Frequently, these dislocations may be reduced upon the Sweet principle, thus:—Having the patient on his back, secure the hips firmly by assistants, then seize the limb by the knee with one hand, and by the ankle with the other, bend or flex the leg upon its upper part or thigh, and then rotate the thigh a little outward, gradually carrying the limb outward and then push

up the leg toward the face of the patient, bending the thigh so as to bring its front surface as closely as possible against the abdomen or lower belly; this having been done, rotate the limb in various directions, which will enable the head of the bone to pass over the edge of the socket into its natural position.

DISLOCATION OF THE KNEE-PAN.

THE knee-pan or patella may be dislocated in three ways, *outward*, *inward*, and *upward*. The *outward* luxation is the most common, and may be known by the great projection or tumor on the outside of the knee-joint instead of in front, with pain, stiffness of the knee, and inability to walk. The *inward* luxation is very uncommon, and only differs in its symptoms from the preceding, by the knee-pan forming a projection on the inside of the knee-joint.

TREATMENT. To *reduce* either of these dislocations, place the patient upon his back, and then raise the leg by the heel, which relaxes the muscles of the thigh; then press *down* the edge of the knee-pan forming the projection or tumor, and when this is done to a sufficient extent, the muscles will draw the bone into its proper position. After its reduction, allay swelling and inflammation by cooling lotions, and in two or three days, apply a bandage. The limb should not be used for three or four weeks, except a little passive motion toward the latter part of this period, to prevent a stiff joint.

The *upward* dislocation is caused by a rupture of the ligament of the knee-pan, from which the knee-pan is drawn on the upper and fore part of the thigh-bone, sometimes for several inches, above the knee-joint, and may be known by the ease with which the knee-pan may be moved from side to side; by the depression felt in the place from which it has been forced; by the inability of the limb to bear the weight of the body; and by the great amount of subsequent inflammation.

TREATMENT. To *reduce* this luxation, the joint must first be treated with cold applications, &c., for six or seven days, in order to overcome the inflammation; after which, the whole limb should be bandaged from the toes to the groin, the patient being in a sitting posture to relax the muscles; and the bandage should be applied in the same manner at the knee-joint as recommended in transverse fracture of the knee-pan, (page 569) in order to keep the bone in its proper place. In about one month afterward, the joint may be moved passively, to overcome any stiffness, and the patient must not bear his weight upon, nor actively use the limb too soon.

Partial outward dislocations of the knee-pan may occur, in which the knee is slightly bent and immovable, and a sickening pain at the part, with faintness, is experienced. The treatment is somewhat similar to that described above for *complete* dislocations.

DISLOCATION OF THE KNEE JOINT.

THE principal bone below the knee joint is the tibia or shin-bone, and this may be dislocated in four directions, *backward*, *forward*, *inward*, and *outward*, and which may be readily detected. The *backward* dislocation is complete, and may be known by the shortening of the limb; by the projecting bony condyle at the knee, and the depression below it; and by the leg being bent forward. The *forward* dislocation is also complete, and may

be known by the tibia being felt above and forward of the thigh bone, which is depressed and thrown rather to one side. The *inward* dislocation is incomplete, and rare, and may be known by the projection of the tibia on the inner side of the knee joint, while there is a slight outward projection of the lower end of the thigh bone. The *outer* dislocation is also rare and incomplete, and may be known by the tibia being prominent on the outer side of the knee joint, while the lower end of the thigh-bone projects inwardly.

TREATMENT. These dislocations may all be *reduced* by extension and counter-extension; the thigh must be firmly fixed, when the leg is to be drawn downward by an assistant, until the edges of the dislocated bones are entirely clear of each other, and then, by pressing directly on the ends of the bones, in a proper direction, they are easily brought into their natural position. The patient may be seated in a chair during the operation, having the knee slightly flexed and resting upon some solid body.

Injuries at the knee joint are almost always attended with considerable inflammation; consequently, after the reduction, the limb must be kept quiet, using the general means heretofore named to overcome the inflammation. In about three weeks, passive motion may be given to the joint, bending and extending it gently every day, in order to prevent stiffness.

Sometimes in walking with the foot turned outward, the toe will strike against some hard body, and which is followed by an immediate pain in the knee, which cannot be completely straightened; the same may occur from a sudden twist inward, when the foot is turned. This is a *partial dislocation of the thigh bone* from what are called the semilunar cartilages. It may be *reduced* by bending the leg as far back as possible, which, by removing the pressure made by the thigh bone, enables the cartilage to slip into its place. As this accident is very liable to happen again, the return of it is best prevented by a bandage made with a piece of linen having four straps attached to it, and these are bound lightly above and below the knee-pan.

DISLOCATIONS OF THE ANKLE JOINT.

DISLOCATIONS at the ankle joint are very rare, except when accompanied by fracture; they may occur *inwardly, outwardly, forward,* and very seldom *backward*.

The dislocation *inward* is the most common, and may be known by the foot being thrown outward, its inner edge resting on the ground; it may also be easily rotated on its axis; there is a hard tumor on the inside of the ankle, and a depression on the outside, with great pain, and a fracture of the fibula or splinter bone, which may be known by the crepitus or grating sensation perceived about three inches above the ankle.

TREATMENT. In *reducing* this accident, place the patient on his back, somewhat inclined toward the injured side, and bend the leg at right angles with the thigh, so as to relax the muscles; then while one assistant holds the thigh firmly just above the knee, another grasps the foot by the heel and toes, and makes extension, gradually drawing it downward in a line with the leg. As soon as sufficient extension has been made, the operator should press downward upon the tibia, which will replace it. Then apply splints and bandages, keep the foot quiet, resting on its outer side, and bent at right angles with the leg, and overcome inflammation by keeping the parts constantly wet with cold water, or other cooling lotion. At the end of five weeks, the patient may leave his bed and walk on crutches; at the end of eight weeks, frictions and passive motion to the joint may be made; and

twelve or fourteen weeks will elapse before there will be perfect motion in the joint.

The dislocation *outward* is more dangerous than either of the others; the foot is thrown inward, its outer edge rests upon the ground, the toes and foot are pointed downward, and there is a hard tumor outside of the ankle. The splinter bone, and ankle bones are usually fractured.

TREATMENT. To *reduce* this dislocation, the same means must be used as in the preceding case; pressing the tibia inward instead of downward, that is, pressing it toward the inner side of the ankle. After the reduction, place a pad over the fibula or splinter bone, above the outer ankle, extending it a little way up the limb, and applying two splints one to each side of the leg and ankle, with a foot-board to keep the foot at right angles with the leg; bandage the foot and leg to the splints, &c., and let the limb rest on its outer side. The remaining treatment will be the same as in the former case.

The other dislocations are rare, but when they do occur, they must be treated by extension and counter-extension, as in the above varieties, with pressure on the tibia to place it in its natural position; after which apply splints and bandages, and adopt a course very similar to those of the preceding varieties.

ANCHYLOSIS, OR STIFF JOINT.

ANCHYLOSIS is a stiffness or immobility of a joint, occasioned by disease of the joint, or a severe injury. There are three forms of ankylosis, viz: one, in which the cartilage of the bone is destroyed, and ossification, or the fusion of the ends of the bones into one, ensues. This form is incurable. The other form is apt to follow compound dislocations, or ulceration of cartilage; the joints are held together by ligament. They admit of passive motion, but are incurable. The third form is that in which a thickening takes place involving the ligaments, muscles, tendons, &c., around the joint. This form is frequently curable. Gouty and rheumatic persons are often troubled with stiff joints.

Pain and inflammation of the joints, from whatever cause, should always be promptly attended to, in order to prevent ankylosis; the ordinary means must be employed to combat them, as, regularity of the bowels, fomentations to the parts, and frequently leeches or cupping; in some instances, cooling applications will prove more beneficial than warm.

TREATMENT. When the third form of ankylosis is present, the treatment consists in applying frictions to the joint and neighboring muscles, two or three times daily, at the same time using some stimulating liniment, as the common Opodeldoe, Camphor Liniment, Compound Capsicum Liniment, Compound Liniment of Oil of Amber, or Compound Tincture of Camphor. The joints as well as the muscles, should likewise be shampooed vigorously every day, fifteen or twenty minutes each time. Warm fomentations, or an exposure of the part to the action of hot vapor for half an hour or so daily, and made previous to the shampooing and frictions, will facilitate the cure. The joint should be gently bent, and straightened as much as possible without causing pain; and this passive motion should be imparted daily. Any dull pain in the joint may be removed by cupping, or by an Irritating plaster.

Upon ascertaining that the ankylosis cannot be prevented, the limb should be placed in a position most favorable for the patient's use; thus, the legs should be kept straight or extended; when the injury is at the elbow,

the arm should be flexed; and when at the wrist, the hand should be extended, and kept so by means of splints and bandage.

SPRAINS.

WHEN the neighborhood of a joint is forcibly stretched, or otherwise injured so as to cause pain and inflammatory swelling, without a dislocation, it is called a sprain. The parts more generally exposed to this accident are the wrists and ankles. Pain, tenderness, swelling, inflammation, and a dark or black color of the parts, are the ordinary symptoms. Great care should be taken in accidents of this kind to ascertain that no partial dislocation of the bones of the joint injured has happened, for by an inattention to this point many have been rendered permanently lame. A sprain may be discriminated from a dislocation by observing that the swelling comes on gradually, and the usual movements of the joint can be made immediately after the injury, (though these motions become impeded as the swelling occurs); while in dislocation, the swelling and loss of motion of the joint happen immediately after the accident.

Dr. South says, truly, "Sprains are among the most severe accidents to which we are subject, as regards the part itself; the pain is at the moment excruciating, often returns on the slightest movement, and too frequently lays the foundation of what is commonly called white swelling. If one, therefore, might have a choice of the two evils, it would be better to break a limb than sprain a joint, as the former is always the less evil of the two, in ninety-nine cases out of a hundred being cured in the course of a few weeks, if the skin has not been broken, while the effects of the latter may, at best, remain for weeks or months, as weakness or stiffness in the joint. *There are few things for which medical men are more unjustly blamed than for the consequences of a sprain*, and we often hear, 'Why, such an one has only sprained his wrist or his ankle, and he has been under Dr——'s hands so many weeks; I wonder he does not have other advice.' And so he may, and at last be like the woman who 'suffered many things of many physicians, and was nothing bettered, but rather grew worse.'"

TREATMENT. Keep the limb in a flexed and quiet position, and keep down the inflammation by a warm poultice of Elm bark and Lobelia leaves, or of Stramonium Leaves, or of Hops, Wormwood and Tansy, in vinegar. When the injury has been very severe, and the inflammation great, leeches may be applied with benefit, followed by cooling lotions. Cold water, poured upon the injured joint from a height, has been recommended, but it is more suitable to those sprains which are not very severe, though it may be tried in all cases, being careful not to produce too much sedation in the part by its use. The bowels should be kept free by Seidlitz powders. Iodine thirty to sixty grains, dissolved in Alcohol one fluidounce, and applied freely to the part, has been used with success, especially in cases of erysipelatous inflammation; at first it inflames considerably, and causes great pain, but in from twelve to twenty-four hours it effects a cure. In all cases of sprain, after the pain, swelling, &c., have subsided, a stimulating plaster, large enough to cover the part, as the Compound Resin plaster, should be worn for some weeks, and the joint should be carefully exercised and be gradually restored to its ordinary uses. Electro-magnetism will frequently cure the worst sprains, after a few applications. I have found the most success in sprains, by keeping the patient perfectly still, and doing nothing in the way of treatment; the many applications only tend to prolong the pain and difficulty, while, by doing *nothing*, the patient recovers much quicker.

When the sprain is obstinate, or when, after the most acute symptoms have been overcome, there still remains a soreness of the joint, with considerable swelling, weakness of the part, and discoloration of the skin, some stimulating lotion should be used, and I know of no better one than the Compound Tincture of Camphor, with which the parts may be bathed three or four times daily.

NECROSIS.—CARIES.

NECROSIS is a condition of the bone in which its vitality and nutritive functions cease altogether; the bone, or a part of it, is dead, and is ultimately replaced by new bone. It may be caused by wounds, fractures, bruises, exposures to heat and cold, &c.; sometimes it is constitutional. It may be known by a general swelling of the limb, with increased heat, pain, and throbbing; the pain is generally acute and deep-seated. In the more active form of the disease, there are febrile symptoms, as thirst, white coat on the tongue, quick pulse, loss of appetite, and frequently delirium. At first, the swelling is hard, but as the disease progresses, one or more fistulous abscesses form, through which matter and small pieces of bone are discharged. When a bone dies, or a part of it, and the dead part separates from the living, it is called *exfoliation*. Sometimes no loose bone or pieces of bone can be discovered; at others, rather large fragments of the diseased bone may be felt and removed; and again, the abscesses may heal, the old bone being absorbed. Persons between the ages of twelve and twenty-five are more liable to this affection.

Caries is a kind of ulcer on the bone, the nutrition of which, alone, is impaired, thereby rendering it softer and lighter than natural. It may be caused by external injuries, or may be the result of some constitutional taint, as scrofula, scurvy, syphilis, use of mercury, &c. The symptoms are somewhat similar to those of necrosis; the bone appears enlarged, one or more fistulous abscesses form externally, their external edges being soft, red and sunken, the matter discharged is thin, dark-colored and offensive, and a probe, when passed into one of the openings, and carried to the bone, will feel the yielding of the softened bone, together with a gritty sensation.

TREATMENT. The treatment of each of these conditions will be the same. If the disease be recognized at an early period, the surgeon will at once form an opening to the bone by caustic potash, or the knife, that he may direct his remedies upon it. Generally, however, the disease advances considerably before its nature is suspected by the patient.

When the abscess forms, a strong solution of the mild Vegetable Caustic should be injected into its fistulous canals, once, twice, or thrice a day; and if any loose bone be discovered, it should be gently and carefully removed; if it adhere at one end, it may be eventually detached by raising up the loose extremity during each dressing, and keeping it thus by means of lint moistened with the above solution. Every day increase the elevation of the loose end, as well as the amount of lint to sustain it, until the bone can be removed by the forceps. In removing the exfoliated portions of bone, a twisting, semi-rotating motion should be given to them; sometimes, they are so large, or present in such a manner, as to require an incision into the soft parts before they can be removed. As little pain as possible must be caused in this operation. Any undue amount of pain or inflammation may be met with a poultice of Elm and Lobelia. This course must be pursued until all the diseased bone has been removed, and the parts show a

disposition to heal, which may be facilitated by the use of the Red Oxide of Lead plaster.

In addition to these local means, constitutional measures must be adopted, using such agents as are recommended for scrofula, constitutional syphilis, &c., according to the nature of the cause. The diet of the patient should be nutritious, generous, and of easy digestion; the bowels should be kept regular by mild laxatives, and any debility, or hectic fever, will require the use of tonics and stimulants, as the Compound Wine of Comfrey, Port wine and red Peruvian bark, &c. Bathing the whole surface of the body, once or twice a week, will be advantageous. The cure generally requires considerable time. I have had no difficulty, however, in effecting cures, in many instances, upon the above principle. In bad cases, the cure may be facilitated by forming one large opening of the several small ones which are present, and which may be done by passing a ligature along one and through another, or, by cutting the partitions between them with a knife.

• WHITLOW, OR FELON. (*Paronychia*.)

WHITLOW, frequently called felon, is an inflammation of a very painful character, situated at the last joint of the fingers or toes, and which terminates in a burrowing abscess. It is caused by injuries, from exposures of the part to sudden changes of temperature, or to the action of irritating substances, the pricking of pins, needles, broken glass, &c., and frequently arises without any known cause. A bad condition of the system may occasion it. Sometimes it appears to develop itself as an epidemic disease.

There are four kinds of whitlow mentioned by writers, viz: 1. Where it is situated just under the skin, at the root and sides of the nail. 2. Where it is situated in the fleshy fore part of the end of the finger. 3. Where it is within the sheath which contains the tendons of the finger; and 4. Where the periosteum, or covering of the bone, is inflamed. As far as treatment is concerned, it matters but little where the inflammation may be seated. Whitlow is a very painful disease, the first form being the mildest; and if it be not properly attended to, it may not only cause a deformity of the hand, or a loss of one or more of the finger bones, but even a loss of the hand itself. It commences with a deep-seated pain, redness, swelling, and throbbing; the pain soon becomes excruciating, preventing the patient from sleeping, and, sooner or later, matter forms, and burrows through the finger and hand, until it finds an external discharging place.

TREATMENT. The earlier this affection is attended to, the better will it be for the patient. I have frequently removed the disease by resolution, by keeping the following poultice constantly applied to it, changing it three times a day, and continuing its use for a few days after all pricking, tenderness, and pain had ceased:—Take of Elm bark, Pokeroot, Blue Flag root, and Lobelia seed, each, in powder, equal parts, mix with hot ley to form a poultice; apply it as hot as can be borne. The hand and arm must be carried in a sling with the elbow flexed so that the forearm will form an acute angle with the upper arm, and thus have the hand somewhat raised and resting upon the chest.

Should this method fail, or the disease have progressed too far to cure it by resolution, means must be taken to form an opening, that the matter may be discharged as fast as it forms, instead of burrowing under the tissues. This is best effected by applying Caustic Potash to that part of the

swelling at which there is a whitish-yellow appearance, as if the abscess was pointing at the part, and cauterizing directly through the flesh until the abscess is reached; after which the above poultice may be applied, or an ordinary Elm poultice. It is usually advised to cut into the part, even down to the bone, but besides the pain produced, it does not afford as much relief as the cauterization; and if, after twenty-four hours have passed, the cauterizing has not opened the abscess, the knife may then be used without causing any great amount of pain. If, however, the abscess be not deep, the matter appearing near the surface, it may be discharged by means of a probe or lancet; continuing afterward to apply the above poultice. Any fungous flesh, (proud flesh,) which springs up may be removed by sprinkling the mild Vegetable Caustic upon it, or burnt alum. Any febrile symptoms, sleeplessness, costiveness, &c., are best overcome with a purgative or two, bathing the surface of the body, and administering the Compound Tincture of Virginia Snakeroot. In severe cases, the use of Burdock seed and Polygala, as named under Boils, page 503, will be found very beneficial; and will also be of great service during the epidemic form of the disease, as well as among those who are liable to frequent attacks of it.

Sometimes the bone becomes wholly or partially destroyed; in this case, a strong solution of mild Vegetable Caustic must be injected into the part, or the finger may be held in it for some fifteen or twenty minutes, repeating it two or three times a day, and applying the above poultice during the intervals. As soon as the bone is loose, remove it with a pair of forceps. Any stiffness of the joint which remains after the healing of the whitlow, may be treated the same as recommended on page 585, under Anchylosis. During the treatment of whitlow, the decoction of Ground Centaury and Burdock seed, named under Boils, on page 503, may be used with benefit; this will likewise be found valuable in instances where there appears to be a frequent disposition to the disease.

The following have been recommended as applications in the early part of the disease:—

1. Add enough very fine Salt to Oil of Turpentine to form a thin paste, and apply it to the finger, binding it on very tightly. It must not be removed for some days, keeping it constantly moist by dropping Oil of Turpentine on the bandage several times a day, or whenever there is a disposition in it to become dry. It occasions much heat and pain at first.

2. Keep a plaster of some good Extract of Belladonna to the part, and after all pain has ceased, apply the common diachylon, or Lead plaster.

GANGLION, OR BURSAL TUMOR.

GANGLION, or *Weeping Sinew* as some term it, is an encysted, circumscribed, elastic, movable swelling on the tendons in various parts of the body, but more commonly upon the back of the hand, and over the wrist; it frequently occurs just below the knee-pan among housemaids and others, who are much upon their knees when laboring. It occasions no change in the color of the skin, is not usually accompanied with any pain, but when occurring at the wrist, is very apt to cause a permanent weakness of the hand, continuing even after the disappearance of the tumor. It is generally caused by slight blows, falls, twists, sprains, or great and continued friction or pressure upon the parts. Sometimes it occurs without any apparent cause. When opened, it is found to contain a transparent, glairy fluid, resembling the white of egg. It is very indolent in its character, fre-

quently resisting all attempts at removal, and is apt, at times, to degenerate into a malignant fungous affection, especially when irritated too much.

TREATMENT. This consists principally in arousing the absorbents, that the fluid may be carried off by them; to effect which, the best plan is to properly adapt and bind a piece of Lead upon the tumor, so as to make firm and continued compression. And this course may be aided by stimulating liniments, and strong currents of electro-magnetism, being careful not to produce too much irritation in the tumor. It may become necessary as the tumor diminishes, to remove the lead, and reapply it, in order to keep up firm pressure. Compression should be continued for some time after the tumor has disappeared, that the cure may be permanent.

When the swelling is large, and of long standing, as is frequently the case at the knee, in addition to the above measures, it may become necessary not only to apply cups to the whole surface of the tumor, but the Compound Tar plaster may have to be used, keeping up a discharge from it for six or eight weeks. When the symptoms of irritation or inflammation are present to any extent, they are best removed by rest, cooling washes, or warm bitter herb fomentations, omitting the previous treatment until the troublesome symptoms are reduced.

Sometimes, the disease has been cured by painting the tumor well with Tincture of Iodine, three times a day, covering with oil silk, and then firmly compressing it with a bandage.

It usually requires several months to effect a cure; and in those cases where the above means fail, after having been perseveringly tried, it will need the aid of the surgeon to remove the swelling by the knife.

ULCERS.

WHEN the surface of any part of the body is removed by disease or otherwise, whether it be internal or external, and a discharge of matter is thrown out from the portion thus exposed, it is termed ulceration; and the ulcer thus produced may belong to one of the following varieties:—

1. If it be a *simple purulent* ulcer, it will present a bright red appearance, the matter discharged will be thick, easily removed from the exposed surface, having no offensive odor, the ulcer does not extend, but manifests a disposition to diminish in size and heal, the granulations will be red, healthy, and moist, appearing like very fine pimples or granules, of regular size, and the edge of the ulcer will be whitish. All the **TREATMENT** required is a proper position, rest in the recumbent posture, and no applications to the part, save a little dry lint loosely applied, to absorb the pus or matter as it forms. When the parts around an ulcer are too weak to carry on the actions necessary to their recovery, it will be necessary to stimulate the ulcer, as named hereafter, support the parts by bandages, destroy fungous growths by escharotics, and give tonics, or alteratives, nutritious diet, &c., as the peculiarity of each case may demand.

2. If it be an *indolent ulcer*, it will present a pale, flabby appearance, the pus will be thin and watery, or of a dark-yellow color, very difficult of removal from the surface of the ulcer, and frequently giving out a more or less unpleasant odor, the granulations will be high, rounded, smooth, insensible, and pale, often with a tendency to fungous or "proud flesh," and the edge of the ulcer will be glossy, thick, rounded, and everted, and the surrounding parts unhealthy and dark colored. The greater part of the ulcers met with in practice are of this character, and are more commonly located on the legs.

3. If it be an *irritable ulcer*, it will present an excavation, with rough, jagged, inverted, or overhanging edge, the pus will be very small in quantity, very thin, watery, and often acrid and offensive, there are no granulations, but the surface of the ulcer will be covered by a gray, or dusky red, spongy substance, which when touched, is not only very painful but also bleeds, and the surrounding parts will be swollen, red, and painful. The pain frequently comes on in paroxysms, producing spasmodic motions of the limb.

These may be said to include the varieties of ulcers ordinarily met with, although surgeons recognize many more, as scrofulous, cancerous, syphilitic, callous, varicose, &c. The first three of these are treated upon under their respective heads, Scrofula, Cancer, and Syphilis. Ulcers may arise from various causes, as bruises, blows, burns, inflammation, constitutional taint, &c.; but whatever may be their cause, the general principles of treatment will be the same.

TREATMENT. When inflammation is present, this must first be subdued before any other measures are employed. Various means may be used for this purpose, according to the influence they exert; thus, with some, a stream of cold water will exert a beneficial effect; with others, warm fomentations of Hops and Lobelia, or Poppy leaves, will produce the best result; but in most instances, if the ulcer be exposed to the vapor from hot water, or from a decoction of bitter or anodyne herbs, and then be carefully covered with an Elm poultice, not allowing it to bear on the parts too much when they are irritable and painful, much relief will be obtained. And whatever course is found to answer in allaying inflammation or irritation, it should be repeated two or three times daily, and be continued until these symptoms have been subdued.

Should much fetor arise from the ulcer, Yeast may be mixed with the poultice, or some Pyroligneous Acid. A poultice of scraped Carrots has been recommended for the same purpose. After all the above symptoms have disappeared, the ulcer may assume a healthy character; and if not, then the treatment must vary according to the indications.

If it manifest a disposition to become indolent, it must be stimulated, for the purpose of exciting healthy granulations. For this purpose it should be washed every time of dressing with Castile soapsuds to which a little Spirits has been added, and carefully dried; then sprinkle over its surface, some mild Vegetable Caustic, or finely powdered Bloodroot, cover this with a thin layer of dry lint, place over this the Red Oxide of Lead plaster, spread on linen, and sufficiently large to extend a short distance beyond the edge of the ulcer, put over this a compress or piece of muslin folded once or twice, and apply a bandage to the limb enclosing the above dressings. Of course this would be inapplicable to an irritable ulcer. As soon as the ulcer assumes a healthy aspect, adopt the simple treatment above-named.

Sometimes, however, ulcers will be found so obstinate and indolent in their character, as to require a stimulating treatment up to the moment of their healing; after which, if the proper measures be not pursued, they will be very apt to reappear. This is especially the case in that class of ulcers known as "fever sores," and among persons who are addicted to the intemperate use of stimulating liquors. In these cases I have met with invariable success, by the use of electro-magnetism, in addition to the above treatment; the current is to be passed, two or three times a day, as strong as the patient can possibly bear, not only through and directly upon the ulcer, but likewise along the whole course of the limb thus affected.

In addition to these local means, constitutional treatment must be adopted. Where there is much debility, the use of tonics, nourishing diet, and moderate exercise of all parts save the affected limb, are necessary; if there is much pain and inflammation, anodynes, cathartics, diaphoretics; and in all cases of obstinate ulcer, an alterative, as the Compound Syrup of Stillingia, will be found of much service. The bowels should be kept regular, diet should be nutritious and easy of digestion, and acids, fats, and especially liquors, must be avoided. Intemperate patients must be shortened in their allowance of liquor, stopping it altogether if possible, and exhibiting other stimulants, as Carbonate of Ammonia, &c., as a substitute for the Alcoholic drinks. By pursuing a treatment based upon the above principles, I have effected cures where the ulcers were of ten, twelve, and in one instance, twenty years standing.

I have known several instances of the so called "fever sores," to be permanently cured by the application of pounded fresh Chickweed leaves (*Stellaria Media*), to the ulcer, repeating the application twice a day.

FISTULA IN ANO.

FISTULA in Ano is a sinous ulcer in the neighborhood of the anus and rectum, of a very obstinate character, which will continue for years undermining the patient's health, if not properly treated, constantly discharging more or less of a thin, watery, offensive fluid, and having the walls of its little fistulous pipes or canals very hard or callous. There are two varieties of fistula in ano; one, *complete fistula*, the pipes or sinous canals of which open upon some external part in the neighborhood of the anus, and pass either directly straight, or, more commonly, in a crooked direction to the rectum, forming an open communication between this intestine and the external surface of the body. The other, *incomplete fistula*, sometimes called *blind fistula*, one end of the pipes of which remain closed; if the open end is on the outside, it is termed a *blind external fistula*; if it is on the inside, opening into the rectum, it is a *blind internal fistula* whose external position may be ascertained by the redness and hardness of the part immediately over it. These distinctions, however, are of no particular importance in a practical point.

Fistula in ano may be occasioned by various causes, as, derangement of the liver, constipation, piles, relaxation of the bowels, sedentary habits, injuries, riding on horseback, intemperate living, &c.; it is frequently connected with disease of the lungs.

The disease usually commences the same as any other abscess, with a swelling, and more or less inflammation; sometimes the constitution suffers, there being high fever, hard, full pulse, nausea, thirst, and other febrile symptoms. Not unfrequently there is no pain whatever, and very slight swelling, and the patient is not aware of the difficulty until it opens and discharges matter. When there is pain it is usually very severe, rendering it almost a torture to discharge the contents of the bowels and bladder. The progress toward suppuration is generally very slow, and the matter discharged at first, is in large quantity, and exceedingly offensive. The opening may occur near the anus, in the perineum, or at a distance from the anus in the buttocks. There may be one opening or canal; or there may be several; and these may communicate with the bladder, vagina, or other neighboring parts, but more commonly with the rectum,—and it is not uncommon, in complete fistula, for the feces to be partly dis-

charged through these openings. Frequently, the external orifices of the canals will be found, some on each buttock. The edges and walls of these pipes are very hard and callous, and the hardness appears to be proportioned to the duration of the disease; and, on this account, a recent fistula is more readily and quickly cured than one of long standing. It is rarely that a cure occurs spontaneously. Upon passing a probe through one of the fistulous canals, the end of it may be felt in the rectum, by oiling the index finger and passing it into this intestine.

TREATMENT. Ordinarily, patients do not apply for treatment during the early stage of fistula, in consequence of which, from two to six or more months are usually required before a perfect cure can be effected. The treatment will vary according to the stage of the disease. If it be in the forming stage, and accompanied with much pain and inflammation, these may be diminished by the local application of warm emollient poultices, fomentations of bitter herbs, Poppy leaves, Stramonium leaves, &c., together with the internal use of agents generally advised in inflammatory affections, as cathartics, diaphoretics, anodynes, diuretics, &c. The poultice named for whitlow will be found a valuable local application. This treatment will not only allay the severe symptoms but will hasten the suppurative process.

As soon as there is a pointing of the abscess, a softening of the tumor, and the redness disappearing, with the ordinary symptoms of complete suppuration, the part may be opened either with the knife, or by the application of caustic potash, that the pus may escape. The caustic is usually preferable to the knife; and when the abscess is deep or some distance from the external surface, it is better to wait for a time, and apply poultices for the purpose of inviting the suppurative action more directly toward the surface. After the opening of the abscess, all the canals should be injected two or three times a day with Castile Soap suds to which a little spirits have been added, in order to cleanse their walls, and cause them to heal; being careful to heal from the bottom, and not allow the outside to heal first. If there is a tendency to assume an indolent character, a weak alkaline solution may be used, or the Copaiva preparation hereafter named. The patient must keep quiet, keep his bowels regular, and moderately use a nutritious diet.

When the disease assumes a chronic form, which is the form to which the surgeon's attention is more usually called, the treatment will be somewhat different. If it be a "blind internal fistula," an external opening must be made, either with the knife or caustic potash, in order to enable the practitioner to reach, and apply his remedies to the fistulous pipe; if it be a "blind external fistula," it may become necessary to pass up a probe and open the canal into the rectum, but this is not always required nor advisable.

The treatment consists in the application of vegetable caustic to the walls of the canals, which may be introduced on long pieces of cord which have been dipped in wax, or on masses of lint, which must be pushed in the sinuses as far as possible. This will occasion pain for several minutes. A compress may be applied over the parts, and be secured in its place by a bandage. The caustic should be introduced daily, and when the canals are very tortuous a strong solution of it may also be injected into them; if, however, the fistula be very tender and irritable at first, it should be treated with anodyne and emollient poultices, fomentations of bitter herbs, &c., before attempting to examine it with a probe, or to apply the caustic. And in the treatment of the disease generally, great care must be taken not to cause too much pain, being governed in the strength and frequency of our applications by the patient's feelings.

After having continued this treatment for a week or two, it will be well to change it, for a constant use of caustics is not desirable. A mixture may be injected into the sinuses two or three times a day, composed of Balsam Copaiva one fluidrachm, Creosote two drachms, Powdered Gum Arabic one drachm, Camphor mixture eight fluidounces; mix. After which apply the following ointment; take of Ointment of Acetate of Lead, Ointment of Oxide of Zinc, of each one ounce; mix. This must be spread on pledgets of lint or floss silk, and crowded in to the sinuses as firmly as possible, without causing unnecessary pain, in order to make pressure upon their walls, and thus promote absorption of their callosity. In the course of twelve or fourteen days return to the caustic, and so alternate the treatment, until the parts assume a healthy character; being careful always to heal from the bottom, or else the disease will be apt to return. Frequently, and especially in cases of recent origin the above treatment without the caustic, will be found sufficient to effect a cure. The cure may often be facilitated by the application of a ligature to cut the principal sinus through; this is accomplished by passing saddler's silk on a probe through the sinus; a finger introduced into the rectum upon feeling the end of the probe, will bend it and carry it through the rectum externally, carrying the ligature with it; or the eye of the probe may be introduced first, so that the finger may fasten on the thread and bring that through, without the probe. The ligature when passed, is then to be tied by its two ends somewhat tightly, and every day it should be more and more tightened until the parts are cut through, making one common opening of the rectum and fistula. The tightening of the ligature may be accomplished by twisting it from day to day, by means of a small piece of wood passed under it; it must not be permitted to cause too much pain. Should the ligature cause severe pain, much relief will be afforded by anodyne and bitter herb fomentations, and emollient poultices. During the ligating, and subsequently, the same course should be pursued as named above, as if no ligature were used. The best time for dressing a fistula is shortly after the bowels have been emptied.

As the constitution suffers more or less from this disease, internal remedies must be administered, as the Compound Syrup of Yellow Dock with Iodide of Potassium, or the Compound Syrup of Stillingia, &c. The decoction of ground Centaury, and Burdock seed, named under Boils, on page 503, will be found very valuable in all cases. The bowels must be kept regular, diet must be nutritious, liquors must be positively prohibited, and moderate exercise is admissible. If symptoms of Pulmonary disease are present, treat them the same as if no fistula existed. By the above course I have cured fistulas of many years' standing, several of which had been unsuccessfully operated on with the knife, three or four times. There is no difficulty in curing fistula in ano, but there will be considerable in curing the accompanying pulmonary affection, if it be allowed to remain too long, before proper treatment is pursued.

Mr. Henry J. Miller, aged 35, was attacked with fistula and confined to his room for a number of weeks, laboring under very severe pain and extreme debility, so as to affect his mind; his friends advised him to enter the New York City Hospital; he followed their advice and remained there four months, during which time he was operated on, by cutting with the knife, some two or three times. Having received no benefit by this treatment, he left in a most deplorable condition; his mind shattered, his nervous system prostrated, suffering the most excruciating pain and distressing feelings, together with symptoms of pulmonary disease. In this condition he applied to me, I undertook his case with great hesitation, but, by pursuing the

course above mentioned, succeeded in effecting a thorough cure in the course of nine months. Many similar instances could be named, to show the superiority of the above treatment, would the limits of the work permit.

FISSURE OF THE ANUS, is a very troublesome complaint, frequently being very obstinate in its character, and affecting the general health. It may be known by fissures or cracks around the anus, of various lengths, which are very irritable and painful, and discharge a thin fluid. The edges of these cracks gradually become hard. The TREATMENT will be similar to that for fistula in ano; apply fomentations to relieve the tenderness of the part, after which sprinkle the Vegetable Caustic along the cracks, and cover with an ointment spread on lint, made of Extract of Belladonna one drachm, rubbed well with melted Spermaceti seven drachms.

PILES, OR HEMORRHOIDS.

PILES are a very common affection, there being but few persons who are not troubled with them at some period of their life. The disease consists in small tumors in the rectum or about the anus, which are divided into, first, those which are owing to a distended state of the veins of the part; and second, those which present the character of a solid tumor. When the tumors are within the rectum they are called *internal piles*; when without and around the anus, *external*. When they discharge blood they are termed *bleeding piles*, and when no blood appears, *blind piles*.

Piles may be caused by anything that will irritate the lower bowels, producing a determination of blood to the rectum, as drastic cathartics, from the extensive use of which in past years, the disease has become very common, habitual constipation, straining at stool, diseases of the liver, much riding on horse-back, tight stays, sedentary habits, high living, heating, irritating food, &c.

During pregnancy, the constipation to which females are subject, as well as the pressure of the enlarged womb on the pelvic veins, render them extremely liable to attacks of piles.

Piles are frequently preceded by a sense of weight in the back, loins, and lower part of the abdomen, causing the patient to suppose he has some affection of the kidneys, or neighboring organs; at times, symptoms of indigestion are present, as flatulency, uneasiness of the stomach, &c. A disagreeable itching about the anus is a common attendant. Upon going to stool, a stinging or burning pain is experienced, being often very severe, and after the fecal discharge, there is more or less bearing down, or tenesmus. On examining the part, small tumors of a livid appearance will be found, which are usually firm, round, elastic, and of various sizes. If the inflammation is excessive, the patient suffers not only during an evacuation, but all the time; and any effort at returning the pile, or pushing it up, which affords relief under ordinary circumstances, will occasion so much pain as to oblige him to desist. The suffering may be so great as to confine the patient to his bed for several days. When the piles are situated high up the rectum, they are less painful than when low down, and around the verge of the anus. When blood is discharged, the pain and uneasiness are diminished; but when there is no discharge, and especially when the tumors are external, much suffering is experienced, and frequently sitting upon a hard seat causes great uneasiness. Piles may continue for a long time without affecting the general health, or they may occasion many disagreeable symptoms, and if not timely attended to, they may produce falling of the

bowel, fistula in ano, &c.; and instances are not wanting where persons have died from the excessive bleeding accompanying the disease.

TREATMENT. In all cases of piles, whether blind or bleeding, the constipated condition of the bowels must be obviated, and they must be kept in as regular a state as possible by means of mild laxatives, or injections, and in some instances by stewed dried fruits. (See remarks on Constipation, pages 150 and 425.) Any deranged condition of the liver or digestive organs must also be overcome by appropriate means; a permanent cure cannot be expected unless the patient dispenses with those habits which produce and keep up the disease.

When the disease is of the kind known as "bleeding piles," I have met with great success by giving the following preparation internally: Take of Rhubarb, common Rosin, of each, in powder, one ounce, powdered Alum half an ounce,; mix. A tablespoonful of this may be added to half a gill of molasses, of which a tablespoonful may be taken for a dose, and repeated every two, three, or four hours, as the urgency of the case will require. At the same time, the following ointment must be used: Take of Styptic powder one part, Canada balsam one part, Stramonium ointment six parts; mix them well together. A small portion of this should be passed as far up the bowel as possible with the finger, or on a piece of lint or cotton, or it may be warmed and injected into the rectum while in a fluid state. It should be applied two or three times a day, and be retained as long as possible.

In the *blind piles*, or when in a state of tumor, and there is much pain and inflammation, a poultice should be applied to the parts, made of equal parts of Elm bark and Lobelia leaves; or Stramonium leaves, or Poke leaves. In fact, I know of no agent so highly beneficial, in these cases, as the Poke leaf, which should be gathered just previous to the ripening of the berries. When the inflammatory symptoms are very obstinate, the patient may steam the parts by sitting over a hot decoction of bitter herbs, as Hops, Tansy, Poke leaf, Stramonium leaf, &c. Sometimes, cooling applications, sitting in cold water, or applying compresses to the part, moistened in cold water, &c., will prove very beneficial. After the more severe symptoms have been removed, a strong decoction of Poke leaves may be injected into the rectum two or three times a day, while, at the same time, the patient drinks freely of an infusion made of equal parts of Solomon's Seal, Golden Seal, and Elder Flowers. The bowels should be kept regular, the diet should be nutritious, easy of digestion, and rather calculated to keep the bowels open, and all spices, liquors, and heating articles must be positively avoided.

Many articles have been successfully used in the treatment of this disease, as local applications, especially when recent, among which may be named the following: 1. Take of Cream three parts, Oil of Pennyroyal one part; mix. 2. Take of Tannic Acid one scruple, Cerate of Acetate of Lead one ounce, Extract of Stramonium one drachm; rub thoroughly together. 3. Add a sufficient quantity of grated nutmeg to Stramonium ointment, to form a stiff paste. 4. Mix together equal quantities of Castor Oil and Copal varnish. 5. Take of Acetate of Lead thirty grains, burnt Cork, Tobacco ointment, inspissated juice of Poke, each, three drachms; mix. Either of the above may be applied to the parts on cotton or lint, and repeated two or three times a day. 6. Fresh Linseed Oil is said to have effected permanent cures in two or three weeks, by giving it twice a day, in doses of two ounces, avoiding at the same time alcoholic drinks and stimulating diet. It may increase the stools, but causes no bad results.

7. When the bleeding is excessive, it has been checked by the following : Take pure Oil of Turpentine half a fluidrachm, Tincture of Kino, Syrup of Ginger, each, one fluidrachm, Cinnamon, rain-water, each, three fluidrachms, mucilage of gum Arabic half a fluidounce, or more ; mix for a dose, to be repeated two or three times a day. Cold water injected daily, will give tone to the veins of the rectum. In preparing the above, the Turpentine and mucilage should first be rubbed together. 8. The following has afforded considerable relief to pregnant females, and others, affected with bleeding piles, and has often made cures :—Take of Solomon's Seal four ounces, boiling water two pints, Molasses one pint ; mix, and simmer gradually to one pint and a half, and strain. To this add two ounces of powdered Rosin. The dose is a wineglassful, three or four times a day, shaking the mixture each time before using it.

When the piles are callous and hard, various means have been used, as the application daily of a solution of Nitrate of Silver, Nitric Acid, Caustic Potash, &c. ; but these should only be used by the surgeon. Chromic Acid, applied freely over the whole of the tumor, has been found successful. This acid consists of a thick crystalline pap, which, when rightly managed, does not spread beyond the prescribed limits. It occasions uneasiness for some hours, sometimes acute, burning pain. A slough passes away, and the tumor shrinks and becomes insensible. As soon as the erosive influence of this acid is finished, it passes into a state of inert, pulverulent sesquioxide.

If these measures fail, the tumor will require to be removed by ligature, an operation which none but a medical man should attempt. (For Piles during pregnancy, see page 525.)

FALLING OF THE BOWEL.

FALLING of the bowel, or Prolapsus Ani, is a complaint in which the rectum protrudes in a greater or less degree at the verge of the anus. It may occur at any period of life, but infants and elderly persons are more subject to it. It may be owing to an irritation of the rectum by the use of aloetic purgatives, worms, piles, straining at stool, violent coughing, long-continued crying, or loud talking, &c. It may depend upon a relaxation of the parts, constipation, diarrhea, stricture in the urethra, enlarged prostate, &c., and its size may vary from the slightest appearance of the intestine at the anus, to its external protrusion nearly as large as a child's head.

When there is violent pain, inflammation, and febrile symptoms, or when it is complicated with strangulation, the case is of a serious nature. In adults, the disease is often connected with piles.

TREATMENT. Among children, ascertain the cause, and remove it if possible. Keep the bowels regular ; always return the bowel immediately after its protrusion ; let the evacuations be made while lying down ; avoid crying and other straining efforts as much as possible ; bathe or inject the parts with cold water and astringent liquids, and administer internally an infusion of equal parts of Solomon's Seal and Golden Seal.

Among adults, the protruded part should be replaced at once, which, if the patient cannot accomplish himself, may be done by placing him upon his back, or knees, having the hips elevated, and then, oiling the fingers, carefully press and push the bowel back into the anus ; when this is accomplished, inject into the rectum about an ounce of a strong infusion of Solomon's Seal root, Crowfoot root, and Poke leaves, apply a compress of cotton

over the anus, support it by means of a T bandage, and have the injection retained as long as possible. The injection may be repeated two or three times a day. An injection composed of one fluidounce of Geranium, in which one or two grains of Sulphate of Iron have been dissolved, has also been used with benefit.

Sometimes, however, the pain and inflammation are so severe, as to render it impossible to return the intestine; when this is the case, these symptoms must be removed by the means named for similar ones in piles, and after their removal, attempts must be made to return it.

Persons who are subject to this complaint, should keep their bowels regular by proper diet, should be careful not to strain, nor stoop too much when at stool, should avoid all severe exercise, and should constantly support the parts by means of a compress and T bandage. A suppository passed into the rectum and supported as above, has proved useful; it may be made as follows:—Take of Spermaceti two ounces, Wax half an ounce, Canada Balsam one drachm, melt together, and when nearly cold, add of Tannic Acid two drachms. If this be found too firm for a suppository it may be rendered less so by the addition of a sufficient quantity of Linseed Oil. It may be worn constantly.

I have derived considerable benefit in many instances, by the following injection, one teaspoonful of which may be injected into the rectum, and retained there as long as possible, repeating it three or four times a day:—Take of Tincture of Prickly-Ash berries four fluidounces, Tincture of Nux Vomica three fluidrachms; mix.

TUMORS.

A TUMOR is an unnatural rising or prominence, of greater or less size, developed on any part of the body, and owing its origin to some unhealthy action. There are several varieties of tumor, as scrofulous, cancerous, poly-pous, fatty, encysted, &c., some of which have been treated upon under the heads of Scrofula, Cancer, Polypus, &c. At this place I shall confine my remarks to fatty and encysted tumors, which are more commonly met with in the region of the head.

The *fatty tumor*, also known as the *adipose* and *steatomatous*, usually presents a soft, inelastic, and frequently lobulated appearance, without any pain or discoloration of the skin. It commences very small, but slowly attains to a very large size, its bulk being the only inconvenience to the patient; its contents are of an adipose character.

The *Encysted Tumor* or *Wen* commences with a small swelling, gradually increasing in size, seldom, however, reaching the great bulk of the preceding. The tumor is round, circumscribed, elastic, movable, without pain or discoloration of the skin, and is composed of a sac or cyst, within which various matters are contained.

Either of these tumors may become inflamed and painful; and occasionally degenerate into a malignant condition. Such changes, sometimes happen.

TREATMENT. These tumors may frequently be removed by the application of Caustic Potash over them, being careful not to allow it, when applied, to run upon the adjacent parts. Then cover with an Elm poultice, renewing it two or three times a day; when the slough formed separates, the contents of the tumor may be removed; or, if necessary, the caustic may be applied a second time. The pain for five or ten minutes is very severe, after the

use of the caustic. The Elm poultice favors the sloughing, as well as softens the contents of the tumor.

But by far the best plan in these cases, is to remove the tumors by the knife, because the operation is less painful and tedious. Sometimes they can be removed by ligature; either of these operations should be conducted by a medical man, to avoid accidents of a serious nature. If an obstinate ulcer remains after the removal of the tumor, treat it the same as named under Ulcers, on page 591.

Wens have occasionally been removed by rubbing them three or four times a day, with a mixture made by saturating five fluidounces of water with Sal-Ammoniac, and then adding one ounce of Hydrochloric acid. Another preparation, composed of Sal-ammoniac two drachms, dissolved in water a fluidounce, to which add Tincture of Conium Maculatum a fluidounce, has likewise been used with success in many tumors; the parts are to be bathed with it, and a compress kept over them, constantly moistened with it. Some tumors have been removed by the use of the Compound plaster of Belladonna.

POLYPUS.

POLYPUS is a tumor frequently met with growing in the nose and uterus, and occasionally they are found in the ear, stomach, intestines, &c. They have been divided into several species, according to their peculiar character, thus, they are mucous, soft, and vesicular; and when *hard* they are either fibrous (fleshy) or scirrhus (cancerous.)

The polypi met with in the nose are usually of a gelatinous character, soft and slightly vascular, their color is yellow, or yellowish-white, and they are somewhat transparent. The tumors grow from the mucous membrane, and have a narrow base, or neck, as it is termed, but sometimes their base is very broad. They generally increase in size, giving rise to sneezing, catarrhal symptoms, fulness and dull pain in the head, &c., and when very large, they fill up the cavity of the nose, and interfere with respiration, especially during sleep, the individual breathing with his mouth open. These large polypi may be seen in front at the nostril, or protruding in the back part of the throat. The nostril attacked is usually larger than its fellow, but if both are affected, the whole nose enlarges.

Generally, the only trouble with polypus of the nose is its interference with respiration, and the sense of pressure or fulness occasioned by it; but, sometimes it causes much pain, and headache, the bones become carious, discharging a fetid, bloody fluid, and eventually the patient sinks under hemorrhages and hectic fever. This is more commonly the case with old persons than others. The causes of polypus are not understood, it is supposed to be a kind of cell, or zoophytic parasitical growth.

TREATMENT. These nasal polypi should be removed with the polypus forceps; seize the tumor high up, compress it, twist it, and at the same time pull upon it, and it will readily detach itself. The compression, twisting, and pulling should be done simultaneously, forming an "all-together" action, but little if any pain is experienced, and the bleeding which follows is slight; should it be considerable, it may be checked by the application of styptics. After the detachment of the tumor, it will be proper to use the following powder to destroy any portions which may have been left behind, as well as to prevent a re-growth of the polypus:—Take of Bloodroot, Bayberry bark, mild Vegetable Caustic, each, equal parts; mix. This may be used as a snuff, or be applied directly to the parts on lint, or with a camel's

hair pencil. Or, the following may be used instead:—Take of Sulphate of Zinc two scruples, dissolve it in one fluidounce of water; introduce this, upon lint well moistened with it, as far up into the nostril as possible, repeating the operation four or five times a day. Polypus has occasionally been cured by either of these applications without the use of the forceps.

When the general health is affected, attention must also be directed to it, giving tonics, laxatives, alteratives, &c., as the particular symptoms of each case demand, not neglecting the functions of the skin, diet, and exercise. As an alterative, the Compound Syrup of *Stillingia* with the Iodide of Potassium, will be found adapted to most cases.

The womb is sometimes affected with polypus, giving rise to frequent discharges of blood, and when large, occasioning bearing-down sensations, a fetid, vaginal discharge, and a gradual failure of the general health. When these symptoms are present the female should at once apply for aid; and none but a medical man should be permitted to treat the case.

STRICTURE OF THE RECTUM.

SEDENTARY persons, and those who are subject to constipation, are liable to a thickening and hardening of the rectum, the result of chronic inflammation of the part, and which is called "stricture of the rectum." The stricture is usually situated about two inches above the anus, sometimes more, at others less, but seldom beyond the reach of the finger. It may present merely a hardened ring, not exceeding half an inch in width, or it may extend upwards some four or five inches. Its approach is gradual, and at first it is very apt to be mistaken for costiveness, but does not yield to the proper treatment for this difficulty. Hardened feces, piles, constipation, straining at stool, cathartics, &c., may produce stricture of the rectum.

The symptoms of this disease are not always readily recognized; at first there is costiveness, and the patient is obliged to strain considerably, in order to evacuate the feces; if these be hard, they pass in narrow, flattened pieces; if liquid, they escape with force, as if ejected from a syringe. After a time, a dull, heavy pain is experienced around the loins, the feces are voided with more difficulty, and even with pain, frequently with more or less tenesmus or bearing down. The neighboring organs become irritated, the legs are attacked with cramps, and the general health is gradually impaired, with symptoms of dyspepsia. Upon passing the finger into the rectum, the strictured part will generally be recognized. The disease sometimes assumes a malignant form. Flattened feces are also a symptom of enlarged prostate, but in this case, the projecting gland, by its pressure, forms a groove or channel on one side of the fecal matter.

TREATMENT. The patient should constantly wear a bougie, which must be oiled and carefully passed into the rectum beyond the strictured part, and retained in its place by a T bandage. This should be worn, every time after its introduction, as long as the patient can bear it. A small bougie is to be used first, and the size should be gradually increased, as the dilatation of the part will allow, until a full sized bougie can be worn.

When there is a discharge of matter, or when the part is very hard and unyielding, Vegetable Caustic may be applied to the parts, on lint, sprinkled on the bougie, or by injecting a strong solution of it. Medicated bougies will frequently be useful; these may be composed of Bloodroot, Sulphate of Zinc, balsam of *Copaiba*, Vegetable Caustic, Canada balsam, *Strychnia*, Extract of *Belladonna*, &c., in various combinations, with spermaceti, tallow, wax, honey, &c., to give the required solidity.

The bowels should be kept regular, producing soft stools daily, so as not to occasion any bearing-down efforts; the skin should be bathed once or twice a week, the proper diet made use of, and constitutional remedies must be administered, according to the existing indications, when there is any disturbance of the general health.

RUPTURE, OR HERNIA.

WHEN a portion of the omentum or intestines, escapes from its natural situation in the cavity of the abdomen, it is termed a hernia, or rupture; it is sometimes called a *breech*, or *burst*. This is a very common accident, especially among laboring persons, and is one that requires a knowledge of the anatomical relations of the parts, as well as of the proper mode of treatment; for, frequently, in these cases, an indecision on the part of the practitioner, or a delay of an hour, will cost the patient his life.

Hernia may be occasioned by any thing that will weaken the walls of the abdomen, as pregnancy, dropsy, sedentary habits, straining at stool, &c., and it very frequently follows severe lifting, straining, or other violent muscular exercise, and may occur from long, tiresome walking, or even riding, more especially when exposed to these causes, after recovery from some debilitating disease. Fat persons are very liable to hernia; and it is also caused by wearing tight clothes.

Hernia may occur at several different parts, and has accordingly been divided into: 1. *Umbilical hernia*, which is a protrusion at the umbilicus, or navel; 2. *Inguinal hernia*, when the bowel protrudes at the groin; 3. *Scrotal hernia*, when it descends into the bag, or scrotum; 4. *Ventral hernia*, when it occurs at any part in front of the abdomen, but not at the navel; 5. *Femoral hernia*, when seated in the upper and fore part of the thigh. In some persons hernia comes on gradually, causing but little inconvenience, except what arises from the size of the swelling. In others, it comes on suddenly, being attended with a sensation as if something had given way, and considerable pain. The swelling in hernia is subject to a change in size, being smaller when the patient lies down on his back, and larger when he stands up and holds his breath; it also enlarges upon coughing. It frequently diminishes when pressed, and increases in size again when the pressure is removed. It is frequently accompanied with constipation, colic, and vomiting.

A rupture is *reducible*, *irreducible*, or *strangulated*. When it is reducible, the symptoms are the same as just named. The patient must be placed upon his back, with the thighs bent toward the abdomen, and attempts be made, by careful and gentle pressure, to return the protruding parts. The fingers of one hand may be occupied in this operation, while the other hand supports and gradually raises the swelling. The return of the intestine is followed with a peculiar gurgling noise. No attempts should be made to reduce a rupture accompanied with pain and inflammation, until these have first been overcome. If too much force be employed in replacing the tumor, it may burst the intestine. About ten or twenty minutes is frequently required to return the protruding parts. As there is a constant liability to a return of the rupture, it is necessary to wear a truss in order to prevent this. In my own experience, I have found the trusses of Messrs. Marsh & Co., New York City, or Messrs. A. J. Howe. & Co., Cincinnati, O., superior to any others; they not only support the part, preventing any return of the protrusion, but, if worn according to the direc-

tions given by the proprietors, will, in by far the great majority of cases, effect permanent cures.

When the hernia is *irreducible*, and cannot be returned, which is generally owing to adhesions, and there are no unpleasant symptoms present, the swelling should be worn in a suspensory bandage, and much attention should be paid to keeping the bowels regular, and avoiding any great amount of exercise.

When a hernia is *strangulated*, there is a swelling at the ruptured place, with pain, which extends over the neighboring parts, and followed by nausea, retching, costiveness, and febrile symptoms. If the reduction be delayed, there will be a small, quick, and hard pulse, great anxiety, restlessness, and coldness of the extremities. If the case is about to terminate suddenly, mortification ensues, hiccough occurs, the swelling subsides, the patient feels easier, has a discharge by stool, and fancies himself better; cold sweats take place, the pulse is hardly perceptible, respiration weak, and the patient dies, probably in convulsions. The cause of the strangulation is the compression made on the prolapsed intestine by the opening through which it passes.

TREATMENT. In the *treatment* of strangulated hernia, muscular relaxation must be produced as speedily as possible. A poultice of Lobelia and Stramonium leaves, should be applied over the part, as warm as the patient can bear; an injection should be administered, composed of a strong decoction of Boneset and Senna, to a pint of which half a fluidounce, or a fluidounce of the Compound Tincture of Lobelia and Capsicum has been added. This Compound Tincture should also be given by mouth, in order to cause nausea and a relaxed state of the system. The warm bath is also an excellent method of producing relaxation, the patient being kept in it until he feels faint. After thorough relaxation of the muscular system has been produced, attempts should then be made to return the protruding intestine, in the same manner as for reducible hernia. In some instances, when the strangulation is recent, the Tincture of Gelseminum may be administered to produce the desired relaxation; but the Lobelia preparation is generally preferable on account of its prompt influence, which does not always attend the use of Gelseminum. After the reduction of the hernia, means should be taken to retain the parts, until a truss can be worn, and the patient should have a slightly stimulating treatment to overcome the depressing effects of the relaxants employed.

If the various means employed do not cause the relaxation in seasonable time, so that the reduction can be safely accomplished, an operation may be required with the knife, which should be undertaken only by a skilful surgeon,—and even then the chances are against the patient's recovery.

After the reduction of hernia a permanent cure may frequently be effected by the application of the Compound Tar plaster over the parts, keeping up a discharge for six or seven weeks, at the same time maintaining regularity of the bowels, and keeping the patient in bed on his back, with compresses over the part to prevent a return of the rupture. Any motion or straining must be avoided during this treatment, lest a protrusion take place. This cures by exciting adhesive inflammation. After the sore produced by the plaster has healed, a truss should be worn over the part for two or three months, gradually lessening its pressure.

In an excellent English work, by Dr. J. F. South, called "Household Surgery," the following valuable remarks are made on this subject:

"Whenever any one finds a swelling at the groin or navel, especially if it have come on suddenly after exertion, he should lose no time in going

to the doctor for the purpose of knowing what its true nature is, for if it be a rupture it will require immediate attention ; and from want of this many persons have lost their lives. Females are often subject to a rupture, which, from motives of modesty, they conceal, and ask for no assistance till it is too late. The celebrated Queen Caroline, wife of George II., lost her life in this way.

“If the medical man determine the swelling to be a rupture, he will recommend a truss or instrument to prevent the bowel slipping out of the belly. If a truss is to be of real use, it should be made specially for the person. The usual way is to go to a truss society, or a surgeons’ instrument maker and get a truss fitted. * * * * *

“If the person wish to get cured of his rupture, he should never take his truss off, except for a few minutes to cleanse his skin with a sponge, and this even should never be done but while he lies down. The truss should always be kept on, whether up or in bed, and if this plan be pursued by young people under eighteen or twenty years of age, and they be careful not to use violent exertion, a rupture will generally be cured after wearing a truss three or four years. (Howe & Co.’s truss seldom requires this time.—K.)

“It is always well for those who can afford it to have two trusses of the same size and strength at the same time, so that in case of the spring of the one in use snapping, or it requiring to be mended, the other may be ready to take its place. For if, even for a day, the person be about without his truss, the advantage gained by six or eight months’ previous wear will be lost, and all will have to be begun again. * * * * *

“Persons who have ruptures should be especially attentive to keep their bowels regular, so as to be moved every day, and not allowed to become costive.

“If persons who have ruptures do not wear a truss, or if the truss they wear do not keep the bowel up in its place, but allow it to slip down by the side of the pad, either from the instrument not fitting, or from it not being strong enough to resist the constant exertions of daily labor ; or if the truss be worn broken, as is very frequently the case, the person goes about at the risk of his life. It may indeed be, that a person will have a rupture for years, nay, even for his whole life, may wear no truss, and when he lies down the rupture may be returned, or it may continue down and incapable of being returned at all, and yet he suffer no inconvenience beyond a little occasional lassitude. But this is the exception, not the rule, and from some trifling circumstance or other the bowel becomes strangled, and the person is certainly destroyed, if not relieved by means presently to be mentioned, or, on failure of them, by an operation, which, however, is not always sure of saving life.

“When a person has been costive two or three days, and he becomes violently and frequently sick, at first throwing up stuff like coffee grounds, and after some hours, like stools, very offensive ; if there be a feeling of a cord tied round the midriff, constant feeling of sickness, much uneasiness and anxiety, there is great reason for supposing that this has something to do with a rupture. The inquiry must be made if the person have any swelling in the groin or its neighborhood, at the navel, or any where else upon the belly ; and if there be any such swelling, how long it has been, whether it ever returned, or could be returned, and when it first was unable to be returned ; and whether a truss had been worn or not ; whether the rupture had ever been thus fixed before, and whether it had been accompanied with vomiting or costiveness, and how these had been then relieved.

"If it be answered that the swelling had always disappeared on lying down, or that it could be returned while in that posture, till such time when the person had over-exerted himself, the swelling had suddenly become larger, and would not return with all his efforts, that then he had become sick and vomited, and that the vomiting had become more severe and more frequent, and that the bowels were costive, and whatever medicine was given, or other fluid taken, was almost immediately rejected; then there is little doubt that the bowel has become strangled, and that its contents cannot pass though it to be voided as stools, and are consequently vomited.

"*What is then to be done?* It very commonly happens that persons who do not wear a truss, and who are aware of the nature of their complaint, now and then have some difficulty in getting their rupture up, and feel sickish, and uncomfortable from it being larger and less readily inclined to return than usual. They learn, however, some mode of handling the part, and after more or less effort, replace it, and therefore often rely upon their own capabilities, till they get into a very dangerous condition.

"In these cases, a medical man should *always* be sent for immediately, for if circumstances should require the performance of an operation, its *safety* mainly depends on its being performed early, and its *danger* on its being delayed. While the doctor is being fetched, the patient may be put into a warm bath up to his neck, and kept there till he feel very faint;" (or the means named above may be used.—K.) "he may then attempt, according to his own usual method, to put the rupture up, by pressing it gently, if it be in the groin, or by lifting it up if in the bag, and gently squeezing it toward the belly, but no violence must be used, or the gut will burst."

SYPHILIS, OR VENEREAL DISEASE.

GONORRHEA has already been treated upon in a previous part of the work, at present, I shall confine my remarks to that form of syphilis vulgarly called "pox," a disease which, though it may be communicated by other means, as contact with syphilitic virus in water-closets, &c., is more commonly produced by cohabitation with persons already diseased. The parts through which the poison is received into the system, are delicate mucous surfaces, as the glans penis, and abraded cutaneous surfaces. Syphilis may manifest itself in several ways, in the form of *chancre*, *bubo*, and *secondary* or *constitutional symptoms*.

Chancre usually manifests itself in from five to fourteen days after exposure, appearing at first as a small pimple, filled with a transparent fluid, and surrounded by a slight inflammation. It is most always accompanied with a slight itching, assumes a yellowish color, breaks, and forms an ulcer from which is discharged an infectious syphilitic matter. Sometimes there is inflammation followed by ulceration, without any appearance of the pimple. The organs of generation are more commonly the seat of chancre, though they have been met with around the anus, on the lips, nostrils, and other parts.

Chancre may manifest itself under four forms, and which appear to be owing to the constitution of the patient, and his mode of living, they are as follows:—

1. *The simple chancre*, characterized by presenting an excavated sore with the surrounding parts red, swollen, and inflamed, and more or less painful; finally, the base of the ulcer is raised to the level of the surrounding structures by granulations, which bleed readily. The ulcer spreads in breadth

more than in depth, has but little hardness about it, and when seated on the frenum or bridle, is very apt to destroy it.

2. The *indurated chancre*, which has a hardened base, and sometimes its edges are also hard and elevated.

3. The *phagedenic chancre*, which presents a sharp, irregular margin, or uneven ragged surface of an ash color, with a thin, ichorous discharge, and no granulations; it is more or less painful, readily bleeds when touched, and more or less rapidly destroys the neighboring parts. Sometimes it is accompanied by slight redness around it, or by swelling. It occurs in impaired and irritable constitutions.

4. The *sloughing chancre*, this is usually the result of neglect and uncleanliness. The surface of the ulcer is of a dark, black color, and the parts around it are inflamed and dark red; there is pain, swelling, and a rapid destruction of the parts by sloughing. Phymosis, or a swelling of the foreskin so that it cannot be drawn back, is apt to be present, concealing the ulcer from view, but which may be known to exist by the offensive, ichorous discharge which takes place from the contracted orifice of the foreskin. This form of chancre is generally attended with more or less severe febrile symptoms, and among intemperate persons, with typhoid symptoms.

Bubo generally commences with a pain in the groin, accompanied by swelling and hardness, which increases in size, with redness of the skin, and throbbing in the tumor, and causing some difficulty in walking. After a longer or shorter period it opens, and discharges matter; or, as the inflammatory appearances subside, the bubo goes off without suppurating. Generally there is but one bubo, occasionally, two will be present, one in each groin. A bubo may be healthy, irritable, indolent, or phagedenic, the latter two of which are the more troublesome. The indolent bubo is more common in strumous habits; while the phagedenic is usually owing to an erysipelatous inflammation. When chancre or gonorrhea are not present, care must be taken to distinguish bubo from other swellings which may occur in the groin from strains, cold, rupture, aneurism, scirrhus glandular swellings, &c. Bubo is often present as a sympathetic affection caused by gonorrhea.—(See Gonorrhea, page 315.)

Persons affected with syphilitic diseases must be careful not to permit any of the virus to come in contact with the eyes, mouth, or parts which are slightly cut or scratched, as it will give rise to unpleasant symptoms in these as well as other parts of the system, and will be very apt to destroy the eye exposed to its direct action; the utmost care and cleanliness is required in all syphilitic diseases.

TREATMENT. For many years past, when a chancre remains unbroken, and in the pustular form, in which condition it is not acted upon by the oxygen of the atmosphere, I have been in the habit of rupturing the pimple with a needle, and then at once applying a few drops of Nitric or Muriatic Acid. I do not believe that absorption of the syphilitic virus, to any dangerous extent, takes place until after the exposure of the open ulcer to the atmosphere. In some few cases, the acid causes pain for a short time, but in most instances, the pain is slight. No other treatment is required, unless to allay any fears the patient may entertain in regard to a perfect cure, for which purpose the chancre may be kept in contact with the Tincture of Muriate of Iron on lint, as named hereafter. I have treated some hundreds of cases in the above manner, and have not yet heard of any return of the disease in a constitutional form.

When the chancre is open, I know of no better application than the Tincture of Muriate of Iron, which must contain sufficient Muriatic Acid

to enable it to mix with water, without giving any deposit on standing for twenty-four hours, and which deposit may be prevented from occurring in the Tincture of the shops, by the addition of a sufficient amount of Muriatic Acid. This Tincture I have used in this disease since 1834; it is to be gently applied to the chancre, three or four times a day, by means of a feather or piece of lint, being careful not to rub or treat the sore roughly; and during the intervals, a piece of lint moistened with the Tincture, must be kept in constant contact with the ulcer. Occasionally, it causes severe pain, when it should be diluted with as little water as possible, but in most cases, after the first or second applications, patients hardly notice it. It keeps the surface of the ulcer clean and soft, and prevents any absorption of the venereal virus by destroying or neutralizing it as fast as it is discharged. In a day or two after its use, the chancre becomes changed into a simple sore, and is frequently difficult to detect from the surrounding healthy integuments, by which appearance the patient must not be misled, and, in consequence, cease his internal medicines too early.

Previous to having used this tincture in practice, I employed the following preparation, which will also be found beneficial:—Take Sulphate of Quinia forty-eight grains, distilled Water six fluidounces, Sulphuric Acid a sufficient quantity to dissolve the Quinia. Wash the chancres first with Castile Soap, then with the mixture, and dress with lint moistened with it.

Phagedenic and *sloughing* chancres should be washed with a Saturated Solution of Sulphate of Zinc, or, it may be applied on lint, and covered with an Elm poultice. If the parts are healthy after a slough passes away, use the Tincture of Muriate of Iron; but if they remain the same as before in appearance, reapply the Zinc. In *Phymosis* there may be an ulcer on the glans; to determine this, slightly curve the end of a probe, cover it with lint, and pass it around the organ between the glans penis and foreskin; pain will usually be produced when it touches the ulcer, and some portion of the lint, on withdrawing it, will be found stained with purulent matter; but if there is no ulceration, but merely a discharge from the glans, no pain will be occasioned, and the lint will be equally stained with the discharge all over its surface. Remove *Phymosis* as named on page 316.

When a *bubo* is present, we should endeavor to disperse it as speedily as possible, on account of the many inconveniences attending its suppuration. For this purpose, it should be well painted twice a day with a mixture composed of Iodine one scruple, Iodide of Potassium two scruples, Water one ounce. After this, apply a Poke-root poultice, made by roasting the fresh root in hot ashes until it becomes soft, and then mashing it; or, a poultice of Elm and Stramonium leaves may be used. If the *bubo* have not advanced too far, this course will disperse it; but if it obstinately continues its course to suppuration, the Poke-root poultice alone will hasten its progress.

As soon as the suppurative stage has matured, the *bubo* should be opened by Caustic Potash, instead of the knife. The knife causes everted edges, hard to heal, while the Potash disposes them to heal kindly. When the *bubo* has opened, it will be well to inject it once or twice a day with Castile Soap Suds and spirits, followed by an injection of the Tincture of Muriate of Iron, either dilated or not. When indolent, stimulants may be injected, as a solution of Vegetable Caustic, &c.; and in scrofulous patients, the following will be found useful as an injection into it:—Take of Iodine, four grains, Iodide of Potassium eight grains, Water eight fluidounces. Mix and dissolve.

Gangrenous *bubo* may be treated by applying lint to the whole surface of the ulcer, having previously moistened it with a solution of Sulphate of Zinc;

or, a lotion composed of two drachms of Borax, dissolved in a pint of water. This should be changed several times a day.

When a bubo is very indolent, showing but little disposition to disperse or suppurate, the Compound Tar plaster applied over it, and a discharge kept up for some time, will be very apt to remove it.

No matter under what form the venereal disease may manifest itself, whether that of chancre, bubo, or both together, no reliable cure can be expected, unless internal remedies be administered; except it be in the destruction of chancre in its early form of pimple, as heretofore named. Many remedies have been successfully used in this disease, the principal ones of which are the Compound Syrup of Sarsaparilla, the Compound Syrup of Stillingia, either being used with the Iodide of Potassium; or, the Compound Solution of Iodine. The preparation, however, which I have found the most efficient, acting promptly and permanently, is the following:—Take of Compound Syrup of Stillingia, Saturated Tincture of Poke-root, Saturated Tincture of Sheep Laurel, each four fluidounces; mix. The dose varies from a teaspoonful to half a table-spoonful, three times a day, according to the effects of the Sheep Laurel upon the system. Sometimes, I use in addition, the Chloride of Gold and Soda, repeating it two or three times a day; it may be rubbed up with Starch, or Sugar of Milk, be given in solution, or made into a pill mass with extract of Poke.

A very bad case of syphilis of five weeks standing, and which had not received any kind of treatment during that period, was successfully treated upon the above principles. The patient at the time I saw him had several chancres; the surface of the body and head was covered with small red pimples, elevated above a jaundiced skin, and he was in a very debilitated condition. In four weeks a cure was effected, the jaundice being removed at the same time.

The diet of patients affected with these forms of syphilis should be generous, nutritious, and easy of digestion, avoiding acids, all fat or greasy food, stimulating or alcoholic drinks, and much exercise. Exposures to cold or damp must be carefully avoided, and the body should be very comfortably clad in cold and damp seasons. The use of salt is not prohibited, its former prohibition having originated from the fact of its decomposing the mercurial preparations which were so freely used in the disease. Persons free from syphilis should not sleep in the same bed with those who are laboring under it; there is always danger in so doing; and both in gonorrhea and syphilis, patients should be *very particular* not to get any matter upon the fingers or towels, lest it accidentally come in contact with the eyes, and occasion loss of sight. Women are to be treated the same as men, care being taken to examine the parts thoroughly, lest there be some hidden chancre within the organs of generation. And chancres within the male urethra, which frequently occur, will require to be treated with Nitrate of Silver; or by diluted Tincture of Muriate of Iron on lint, when they are within reach.

CONSTITUTIONAL, OR SECONDARY SYPHILIS.

WHEN Syphilis affects the constitution, it appears under two forms, known as the *secondary* and *tertiary*; the latter form being due more to the mercury administered than to the venereal virus, and having symptoms closely allied to those of the secondary kind. These forms are owing to an absorption of the venereal virus into the general system, either from a chancre or bubo, whether with or without the use of mercurials.

The *secondary* form of syphilis may manifest itself in from seven to nine weeks, sometimes sooner, and frequently several months or even years will elapse before its existence is suspected from the symptoms. It appears under a variety of shapes, which probably depend upon the difference of constitution, the difference in constitution of the several parts attacked, and other circumstances. It may be transmitted to offspring, and frequently gives rise to abortions about the fourth or fifth month of pregnancy; sometimes, the child is born at the full term, but with copper-colored blotches and ulcers in various parts of the body, as well as having other symptoms indicative of the taint; and, it is not uncommon for the wife herself to become tainted with the secondary disease when existing in the husband.

Usually the first symptoms appear on the skin, and in the mouth and throat. The eruptions on the skin appear upon the generative parts, about the anus, the forehead, mouth, back, legs and forearms; they may appear as a copper-colored rash, with slight itching; as a copper-colored scaly eruption; as distinct pustules, the base of which is copper-colored, and which eventually form round, deep ulcers, with a pale greyish bottom; as large, flattened, dusky-brown tumors, filled with a fluid, and which burst after a time, forming scabs under which the skin is ulcerated more or less extensively,—this is common on the thighs and legs, or on the arms, but may form on any part of the body, and occasionally, when the ulcers are deep and foul, they penetrate to the bones of the nose, the shin, the forearm, skull, &c., causing ulceration and caries of those parts. Sometimes red, inflammatory tubercles form, which eventually pustulate, and give rise to deep, irregular ulcers, and which are more frequently met with on the cheeks and sides of the nose. Occasionally, there are soft red fungous formations around the parts of generation; frequently the hair falls out; and periostitis, inflammation of the thin membrane covering the bone, or exostosis, inflammation of the bone itself, occurs in the shin. These symptoms, whatever may be their form, are usually preceded or accompanied by febrile symptoms, rheumatic pains in the ends of the long bones, violent nervous headache usually in the forehead, and want of appetite and sleep. The syphilitic rheumatic pains are commonly more severe during the latter part of the afternoon before bedtime. One characteristic of all these cutaneous eruptions is the copper color, and the peculiar, disagreeable odor emitted from the ulcers, which sometimes become very extensive.

The mouth and throat may also be variously affected; the parts may be swollen and sore; or raw and red, and covered with a white secretion; or there may be a foul, yellow, deep ulcer of the throat or tonsil, with raised and ragged edges; or there may be a sloughing ulcer, with irregular edges, ash-colored base, and dark, livid, and swollen surrounding mucous membrane, which may extend to various parts about the throat and nose, destroying them, and sometimes causing death from hemorrhage when an artery is opened. This ulcer is generally attended with febrile symptoms and considerable pain. These affections of the mouth and throat cause a soreness and difficulty in swallowing, a hoarseness in the voice, an offensive breath; and not unfrequently they destroy the palate, the soft bones of the parts, and even the nose itself. With these symptoms the countenance assumes an unhealthy aspect, the patient loses strength and flesh, his sleep is disturbed, he suffers from dull pains in various parts, and if not benefited, hectic fever will arise, followed eventually by death. The hard, painful swellings which form on the bones are called “nodes,” and are owing to a deposit occurring between the bone and its covering.

The ulcers which appear on the surface are generally of an eating character, and more or less rapidly destroy the surrounding parts. The ulcers of the throat may attack the almonds of the ear, the palate, the back part of the throat, or all these together; there is a constant heat and irritation of the parts with soreness, and the formation of a tough, acrid mucus, which is difficult to expectorate. Deafness frequently accompanies ulceration of the throat. When the ulceration extends to the nose, there is a stoppage in one of the nostrils, with pain and tenderness at a particular part, where the sore is located, and the discharge from it, is thin and fetid.

TREATMENT. In both the secondary and tertiary forms of syphilis the treatment will be similar. Alteratives must be taken for a long time, as the Compound Syrup of Sarsaparilla; Compound Syrup of Stillingia; or the preparation containing Sheep Laurel, named on page 607; and in connection with this the Iodine pill must be given; or the Compound Solution of Iodine. The bowels of the patient must be kept regular; the surface of the body must be bathed with a warm alkaline solution every two or three days, and if his strength will permit a Spirit vapor bath may be taken once in every two weeks. The diet will be the same as named for chancre and bubo.

The ulcers which appear externally, may be treated with the Tincture of Muriate of Iron; and with poultices, at night, of powdered Elm and Poke root. Or, a solution of two grains of the Chloride of Gold and Soda to a fluidounce of water, may be applied to them on lint, repeating the application three times a day. The ulcers may be inflamed, irritable, or indolent, and must be treated accordingly. Ulcers in the throat and nose, may be touched with Nitrate of Silver; or Tincture of Iodine; or Tincture of Chloride of Iron; and when inflammation is present, it will be found advantageous to steam the throat, and apply anodyne fomentations externally.

When sleep is disturbed from rheumatic pains or otherwise, Sulphate of Morphia, or the Compound Powder of Ipecacuanha and Opium, may be given at bedtime, to procure rest. Pains in the bones, may generally be benefited by the use of a pill composed of one or two grains of Inspissated Juice of Poke, and a quarter or half a grain of Extract of Stramonium; two or three of these pills may be given per day. Nodes will generally disappear by the application over them of the Compound Plaster of Belladonna; if they suppurate and burst, there may be more or less caries, and the soft parts are apt to form ulcers difficult to heal. It is not advisable to open nodes. Warts require a treatment similar to that named for them under Gonorrhea, page 319.

During pregnancy where there is a suspicion of the syphilitic taint, or in repeated miscarriages, or the production of infected children caused by this virus, one or both parents should be subjected to the above treatment.

STRICTURE OF THE URETHRA.

STRICTURE of the Urethra, or of that canal which passes through the penis, from without to the bladder, is a disease the result of urethral inflammation, and when permitted to go on without proper treatment is apt to prove fatal. Most commonly it is the consequence of gonorrhea, especially when this is neglected or badly treated; but it may arise from masturbation, and the forcible or improper introduction of foreign bodies into the urethra, &c.

Strictures of the urethra, are of three kinds, viz:—the permanent, the spasmodic, and the inflammatory.

Permanent stricture is a very serious, and the most common form of this disease; it is owing to a thickening or hardening of the walls of the urethra, and may be located at any part of the urethral canal, more generally that portion situated behind the bulbous, and which is named the membranous portion. More commonly, the stricture is located about three or four inches from the external opening of the urethra; and in bad cases, there may be several strictures. The symptoms of stricture are as follows: The patient having thoroughly emptied his bladder, as he imagines, observes a few drops remaining, which may moisten his linen; the stream of urine is flattened, or splits in two, or passes in a spiral, or screw-like manner, and gradually diminishes in size; it becomes more painful and difficult to urinate, and the calls to urinate become more frequent; he draws the penis out with considerable force, in the advanced stages, for the purpose of facilitating the escape of the urine, which now passes drop by drop. Frequently the urine is mingled with pus, and at times becomes very thick, and accompanying this condition, the patient will suffer from frequent shivering fits. When the urine is white, or bloody, the disease is of a very serious nature. From the great straining effort to empty the bladder, in the advanced stage, piles, and inguinal hernia, are often produced. Permanent stricture frequently occasions a weakness of the erectile power of the organ.

If stricture be allowed to go on, a great dilatation of the urethra behind the strictured part, will ensue; the coats of the bladder become thickened; the prostate gland frequently enlarges; ulceration of the bladder takes place; and finally abscesses are formed, with fistulous canals in and around the perineum, and the patient is eventually destroyed. Stricture is frequently accompanied with pain along the spermatic cord, in the testicle, loins, perineum, &c., a tingling or itching at the head of the penis, or along the whole course of the urethra, and sometimes a pain. There is frequently a loss of sexual desire and power of erection.

TREATMENT. This consists principally in the careful introduction of metallic bougies into the urethra, from time to time, thereby promoting an absorption of the morbid thickening. When the stricture is very small, or the urethra irritable, catgut or gum elastic bougies may be at first employed.

At first, a bougie must be used which will pass through the stricture without much difficulty; it should be oiled, or anointed with some anodyne ointment, as of Belladonna, Stramonium, Conium, &c., passed slowly and gently through the urethra, almost allowing its own weight to carry it, and when it comes to the stricture, it should not be forced through, but should be held between the thumb and fore-finger, making a gentle pressure, so that its extremity will press upon the stricture, and by holding it thus, gently but perseveringly continuing the pressure for five or ten minutes, the stricture will be felt to yield, and the bougie will slowly pass through the part; and whenever the instrument meets with an obstacle, pursue the same course. If too much pressure be made, the urethra may be torn through, which is frequently the case with careless or ignorant operators; when this happens, immediately withdraw the bougie, instruct the patient not to urinate for a few hours, and do not attempt to pass the bougie again until twelve or fourteen days have passed.

At first, the bougie should be allowed to remain within the urethra for half an hour, but subsequently the time may be gradually increased, as

the parts can bear without irritation. The next day, provided there be no existing inflammation to prevent it, or as soon as this is removed, two bougies should be introduced, commencing with one of the same size as that used the last time, and after allowing it to remain for a few minutes, withdraw it, and immediately pass the other, which should be a size larger. Thus, on every occasion, using two bougies, always beginning with one the same size as that with which the preceding operation had been finished, and concluding with one a size larger. The irritation arising from the pressure, will usually occasion a mucous discharge from the urethra; if the bougie is dry when removed, it is rather an unfavorable indication.

The patient may stand during the operation, sit upon the edge of a bed, or lie down upon it, and the bladder should always be first evacuated, as the instrument causes a desire to urinate, when it comes in contact with the neck of the bladder.

The following rules are given by an English writer, and are proper to observe, in the introduction of bougies :

“1. To begin with one of a moderate size, and to increase it very gradually, but previous to its introduction, it *should be bent in the shape of a catheter*, so as to adapt it to the curvature of the urethra, by which means its passage will be greatly facilitated.

“2. To employ no force in introducing it; but where we meet with resistance, to be content with merely causing its point to press against the stricture for a short time each day, with the hope that, by a perseverance in this plan, a dilatation of the contracted part may at last be effected.

“3. Never to pass it into the bladder, except at first to ascertain the extent of the disease, but merely to carry its point some small distance beyond the stricture or strictures.

“4. To guard against its slipping into the bladder, by bending its end, and tying it with a cotton thread or tape fastened to the penis.

“5. To avoid all exercise during its presence in the urethra.

“6. To continue its occasional use for a considerable length of time after the disappearance of the stricture; and again to have recourse to it on the least return of the obstruction. As the canal of the urethra regains its natural size, and admits the more ready passage of a larger instrument, the patient may be taught to perform this simple operation for himself, which he should not fail to do occasionally, at increasing intervals, for many months, or even years.” This is necessary on account of the tendency to contraction which remains.

In addition to the introduction of the bougie, other means must be pursued, in order to facilitate the cure, and render it permanent; thus: an hour or so previous to the introduction of the bougie, the penis should be kept in a poultice of bruised fresh Stramonium leaves, or of Elm and Lobelia leaves; and two or three times a day the part immediately external to the stricture should be thoroughly anointed with an ointment composed of Belladonna ointment one ounce, Iodine ten grains, Strychnia, dissolved in sufficient Alcohol by means of a drop or two of Nitric Acid, two grains; rub the articles thoroughly together, and use but a small portion at a time. Be careful not to let this come in contact with abraded surfaces, or the eyes, nose, and mouth.

In some cases, an injection of a solution of Sal Soda, Vegetable Caustic, or Alum, will hasten the cure, by causing an irritation of the parts favorable to absorption; or one of these agents, in powder, may be applied upon the strictured part, by means of a proper instrument. And whenever an undue amount of irritation or inflammation is produced, it must be over-

come by mucilaginous diuretics, cathartics, warm hip baths, fomentations, &c., before re-introducing the bougie, or the above agents.

As internal measures, when these are necessary, I usually have the patient drink freely of an infusion of Horsemint, Water Pepper, or Buchu, and take one of the following pills two or three times a day:—Take of powdered *Digitalis* one scruple, *Strychnia* one grain, Extract of *Stramonium* five grains, Extract of *Belladonna* four grains; mix thoroughly together, and divide into twenty pills.

The patient must keep his bowels regular, avoid exposures to cold and damp, as well as any great amount of exercise, and the diet should be plain, but nutritious and easy of digestion, particularly avoiding all stimulating food or drinks.

By the above means I have successfully treated a great number of patients; but should they not remove the stricture after a fair trial, it may become necessary for the surgeon to divide the stricture, or adopt some other course for its relief. And surgical advice should always be had as speedily as possible in all cases of urethral stricture.

Spasmodic Stricture usually comes on suddenly, but without pain, the patient being unable to void his urine, or it may pass with difficulty; the bladder becomes distended, there is an anxiety of countenance, a hot skin, and a quick pulse. It is more common among those who are laboring under permanent stricture, who have phosphatic deposits in the urine, or who have irritability of the urethra caused by the use of acids, wines, cantharides, exposures to cold and damp, improper injections, &c.

The TREATMENT consists in evacuating the bladder as soon as possible, by the introduction of a catheter. This may be readily effected by placing the patient at first in a warm bath. When the catheter reaches the strictured part, it should be held firmly but not forcibly, as in the preceding case, for some ten or fifteen minutes, when it will overcome the stricture and pass into the bladder. If, however, the stricture be very obstinate, a fomentation of fresh *Stramonium* leaves, or Hops and *Lobelia* may be applied around the penis and over the perineum, and kept there for some time, aided by nauseating and relaxing doses of some preparation of *Lobelia*, after which the introduction of the catheter may be attempted.

Dr. Thomas says, "In spasmodic stricture, where the irritability of the urethra is so considerable as to forbid the introduction of a common bougie, this may be readily lessened by touching the point of the instrument slightly with *Liquor Potassa*, after it has been oiled, and is ready for introduction. The effect of *Potassa* employed in this manner upon an irritable urethra is often astonishing, and a full sized bougie may be thus easily got into the bladder, which had been previously regarded as impracticable."

The after-treatment should be regularity of the bowels, temperance, and the use of a pill composed of *Sulphate of Quinia* one grain, Extract of *Belladonna* one-eighth of a grain, *Eupurpurin* two grains; mix for a dose, and repeat it two or three times a day. In bad cases a liniment may also be applied daily, to the perineum and along the course of the urethra, composed of Olive Oil, Oil of Amber, each, one fluidounce, Oil of *Lobelia*, Liniment of *Aconite*, each, two fluidrachms; mix.

Inflammatory Stricture is owing to inflammation caused by gonorrhea, or the improper introduction of foreign bodies into the urethra. It must be removed by cathartics, Spirit vapor bath, anodynes, warm fomentations, nauseants, and other similar measures.

INVERTED TOE-NAIL.

THIS is a very painful disease, generally the result of wearing tight shoes, and is usually accompanied with more or less inflammation, and at times, ulceration. The great toe is the one usually attacked. At first there is only a little uneasiness which ceases when the shoe or boot is removed from the foot; after a time the part becomes tender and inflamed, and the corner or edge of the nail is found pressing deeply into the flesh, while the whole nail is narrow and much arched across. Ulceration eventually ensues, fungous growths or proud flesh appear, the pain becomes very severe, and the patient cannot walk, nor wear a shoe; and sometimes the pain is so severe as to render him feverish, and destroy his appetite and sleep. Occasionally, the severity of the pain gives rise to spasms.



Inverted Toe-nail.

TREATMENT. The foot must be bathed daily in warm ley water, for twenty or thirty minutes each time, after which apply an Elm poultice, made by adding weak ley to the powdered Elm bark, and change the poultice two or three times a day. As soon as this course has removed the inflammation, then after each bathing of the foot, press some lint under the embedded part of the nail so as to elevate it as much as possible without occasioning too much pain; cover with the red Oxide of Lead plaster, and bandage; or, if there be much pain, the Elm poultice may be continued. Dress it thus once or twice a day.

The object of this treatment is to raise the nail from the flesh, that it may be cut off in small pieces from time to time, continuing the introduction of the lint, and cutting off the nail, until the offending portion of it has been removed.

When there is considerable tenderness of the part, some Stramonium ointment may be spread upon the lint; and any proud flesh may be removed by the application of the Vegetable Caustic. After the nail has been sufficiently removed, and the proud flesh destroyed, the part readily heals. Another plan is to scrape the nail along its middle until it is as thin as writing paper, and will readily bend under slight pressure; in some cases this may be pursued in addition to the above means. And the person must not wear tight shoes or boots again, or the difficulty will return. It may require from one to three or four months, in order to make a permanent cure.

BURNS AND SCALDS.

BURNS are produced by fire, hot solid substances, and gunpowder explosions; scalds are caused by hot liquids. Burns and scalds are dangerous in proportion to their severity and extent, which may vary from a simple inflammation of the skin to a deep and extensive destruction not only of the skin, but also of the parts beneath. When severe, burns are accompanied with chills, small, rapid pulse, hot skin, and difficult breathing; when very severe, there is generally vomiting, anxiety, coldness of the extremities, and other symptoms of violent constitutional irritation, in addition. Frequently, however, in cases where death follows in a few hours after the reception of the burn or scald, the patients appear free from pain, and with unimpaired intellect, until within a short time previous to death. On account of the debilitated condition caused in a part by a burn or scald, the

ulcers formed thereby are apt to heal with much difficulty, profusely discharging a thin fluid, and presenting flabby granulations. When severe burns occasion death, this usually happens very shortly after the accident. Severe injuries of this kind should always be treated by a medical man.

TREATMENT. There is nothing peculiar in the treatment of burns and scalds, although from the many agents which have been recommended from time to time, it might be supposed that these accidents required some specific methods or agents different from ordinary ulcers or inflammation. But this is not the case; the indications of treatment, are, to protect the part from the action of the atmosphere; to allay inflammation; to stimulate the ulcers formed when they appear to be indolent; and to remove febrile symptoms by the usual means, and support the system when in a depressed condition.

To fulfil the first and second indications, there is no agent superior to an Elm poultice made with Elm bark and warm milk, and this will be found to answer in nearly all cases of burns and scalds. It should be placed thickly over the burn.

Other agents have, however proved very effectual, probably from their influence in protecting the injured surface from the air, and also, perhaps, from some anodyne or stimulating action beside, according with the condition of the burned parts at the time of their employment. Thus, I have found immediate relief to ensue in many instances, by the application of the following: Procure some of the hard wood soot from the chimney, pound it fine, mix it with fresh lard to form a thick ointment, spread it thickly on raw cotton, and apply it over the burn, renewing it occasionally. Soot is frequently useful in erysipelatous inflammations, and hence, aided by the absence of atmospheric action, it probably effects its beneficial results in burns, the inflammation accompanying which is usually somewhat of an erysipelatous character.

In burns, scalds, and blistered feet, where the skin is broken, the following ointment spread on raw cotton will be found effectual, after having allayed inflammation by an Elm poultice:—Take of Burgundy pitch two ounces, Beeswax half an ounce, Lard or Olive Oil one table-spoonful; melt together, and strain. This is useful on account of its slightly stimulating properties, and the protection it affords against the air.

When the burn is severe, the following have been used with much advantage:—Add slaked Lime to Linseed Oil, and apply, renewing it twice a day; this should be made only as required. Or, a still better preparation in cases where a greater stimulus is required, is, Lime water two fluidounces, Oil of Turpentine, Olive Oil, each, one fluidounce; mix, and apply. If used immediately after a burn, an ounce of Oil of Pennyroyal may be added.

Red Oxide of Lead plaster will be found useful as an application to any kind of burn or scald. The Compound Ointment of Oxide of Zinc will also frequently prove useful as a mild stimulating application. (See Compound Lead Plaster.)

When ulcers are formed, they are to be treated the same as any other ulcer, after the first inflammatory symptoms have been overcome. And care must be taken to keep the fingers and toes apart when the skin on them has been removed by the burn or scald, in order to prevent them from adhering together; and also to resist any disposition to contract and produce deformity, by fixing splints to the limbs, head, &c., and mechanically stretching the parts.

To fulfil the last indication, that is, reducing febrile symptoms, or overcoming prostration, these conditions must be treated on general principles,

meeting urgent symptoms as they present themselves, by the appropriate remedies. When hot fluids are taken in the mouth, or swallowed, Sweet Oil should be immediately drank, and repeated occasionally; at the same time, a free use should be made of the mucilage of Slippery Elm, both as a wash and a drink.

CHAFING AND EXCORIATION.

THE ears, neck, arm-pits, inside of the thighs, &c., are apt to chafe or excoriate in children, from a neglect of proper cleanliness; and in corpulent persons from excessive perspiration and friction of parts. In children, it may be remedied by keeping the parts clean, and dusting them with hair-powder, powdered starch, elm, &c. If this does not answer, apply the ointment mentioned under Burns and Scalds, made of Burgundy Pitch, Beeswax, Lard, and Sweet Oil. When an obstinate sore is produced from chafing, it may be washed with a solution of eight grains of Sulphate of Zinc to four ounces of water, and then dressed with the above ointment.

In adults, these difficulties may be overcome by washing the parts daily with Castile soap and cold water, and then, after drying, sprinkling some powdered Calamine, (native, impure Carbonate of Zinc,) over them. Where certain parts rub against each other, as the buttocks, &c., causing chafing and excoriation, it may be prevented by wearing raw cotton between them.

SUBSTANCES IN THE WINDPIPE OR NOSE.

WHEN a small substance gets lodged in that part of the throat which leads to the lungs, it may choke and kill the person in a few minutes, by preventing the air from passing through the windpipe. There are several methods to pursue in these cases; one is to press the tongue down, and pass the finger and thumb as far back into the throat as possible, and if there be any thing there, to pull it out at once; or if the fingers cannot seize it, a small pair of forceps may be used. Another plan is to immediately seize the person choking, and hold him up in the air by the heels, and while thus with his head hanging down, have some other person give sudden blows between the shoulders. When the articles lodged cannot injure the soft parts, and are out of the reach of the fingers or forceps, they may be pushed further onward to the stomach by a bougie; but when pins, needles, and the like have been swallowed, this should not be done, as it might give rise to fatal results.

When the foreign body passes into the *windpipe*, it creates irritation, inflammation, cough, and difficult breathing, and may destroy the person in a few days; sometimes, it will remain for a long time, causing cough, expectoration of matter, and finally a fatal disease of the lungs. The hanging position, named above, may be tried; and if this does not answer, endeavor to make the person sneeze, or laugh heartily. A young lady in New York city some years since, while laughing, had a button which she was holding in her mouth, to pass low down in the windpipe. Her physicians said nothing effectual could be done for her, but to prolong her life placed her upon a low diet. Many persons called to see her, and among others an elderly lady, who offered the patient a pinch of snuff; she took it, was attacked with sneezing, which caused the button to be forcibly expelled, after having been in the windpipe nearly two weeks; it was covered with matter. When the

above means will not answer, recourse should be had to a surgeon, for it is frequently the case that a surgical operation will save the patient's life.

Substances in the *nose* may be removed by holding the mouth and opposite nostril closed, and then blowing forcibly through the nostril in which the substance is lodged; if this does not succeed, press the thumb against the nose, above the foreign body, and then pass up a bent probe or knitting needle between the nose and the substance, using it as a hook to bring the thing down. If this fails, do not push the body back any further, but apply to a physician. Children are very apt to push things into their nostrils and ears.

Insects in the *ear* may be killed by filling the ear with Sweet Oil, and then syringing out the ear with warm water. But when any solid substance as a pea, bean, pin, &c., gets into the ear, the person should lie upon the side corresponding with the affected ear, and a physician be obtained as soon as possible. The difficulty should not be interfered with, except by a medical man, lest much mischief be thereby occasioned.

POISONS, MINERAL, VEGETABLE, &c.

WHEN *Arsenic* is taken, the most certain antidote is the Hydrated Sesquioxide of Iron, which should be taken in doses of a table-spoonful mixed with water, repeating the dose every five or ten minutes; it requires twelve parts of this Oxide of Iron to neutralize one part of Arsenic. While this is being obtained from the apothecary, the patient should be vomited, and made to drink large draughts of warm milk, flaxseed tea, warm water, &c. The stomach-pump should be used.

When *Corrosive Sublimate* is the poison taken, the best remedy is the white of egg, mixing up the whites of twelve eggs with a quart of water or milk, and giving a glassful every two or three minutes, until the stomach can bear no more. The stomach-pump should be used at once, if one is at hand. The same course may be pursued in poisoning by preparations of *Copper*.

Poisoning by *Opium*, *Laudanum*, or *Morphia*, should be treated by giving an emetic, dashing cold water on the person, rousing the patient by various means, as walking him rapidly between two persons, applying currents of electro-magnetism, &c., and administering coffee. The stomach-pump should be used when at hand. As soon as the patient has partly recovered, a cathartic should be given. A similar course is required in poisoning by *Colchicum*, *Hyoscyamus*, *Stramonium*, *Belladonna*, *Conium*, *Hellebore*, &c. The stomach-pump, emetics, cold to the head, and purgatives, with Ammonia internally, and stimulants externally in the comatose stage, are the means usually employed in poisoning by these narcotics.

Poisoning by *Oxalic Acid* is best overcome by giving Chalk, Lime, Magnesia, (not Calcined,) or plaster from the ceiling, mixing either thick in cold water, and drinking it freely.

When any poisonous salt of *Lead* is swallowed, a large dose of Epsom Salts or Glauber's Salts should be taken, or Plaster of Paris mixed with hard water. These form an insoluble Sulphate of Lead. An overdose of *Tartar Emetic* or *Antimonial wine*, is apt to cause serious consequences; the antidotes are Tannic Acid, infusion of Oak bark, Peruvian bark, Green tea, or other astringent infusions containing Tannic Acid.

A poisonous dose of *Nitrate of Silver* may be neutralized by drinking freely of a solution of common table salt. When any Corrosive Acid, as

Sulphuric, Nitric, Muriatic, &c., has been swallowed, the best antidotes are Lime water, Magnesia, Chalk, Carbonate of Soda, Milk, or Olive Oil.

Prussic Acid, when swallowed, may be treated by Aqua Ammonia, Brandy, Oil of Turpentine, and cold water thrown upon the head and along the spine, together with artificial respiration.

When an acrid *alkali* has been swallowed, as Caustic Potash, strong Aqua Ammonia, &c., Vinegar should be given, pure, or diluted with water.

Sometimes *muscles, lobsters, oysters, fish, &c.*, cause dangerous symptoms which may be overcome if they have been recently eaten, by giving an emetic, followed by a dose of Epsom Salts. The patient may drink freely of Lemonade, or diluted Vinegar. Old English Cheese grated and eaten, is said to be valuable in these cases.

In all the above cases of poisoning, after the more immediately dangerous effects of the poison have been neutralized, should any inflammatory symptoms remain, or prostration of strength, these must be treated on general principles.

Many persons when exposed to the *Poison Vine*, (*Rhus Radicans*), are subject to an irritation or inflammation, accompanied with heat, pain, itching, and vesication, and sometimes symptomatic fever. To remove these effects, the parts may be bathed with a solution of Borax or Copperas; or a wash made by boiling Elder bark in Buttermilk; accompanied with a light, cooling regimen, and cooling purgatives or diuretics. The bruised leaves of *Hardhack*, (*Collinsonia Canadensis*) externally applied, with an infusion of *Nettle-leaved Vervain*, (*Verbena Urticifolia*), in milk and water, drank freely, are said to be excellent antidotes for internal or external poisoning by the above plant. The leaves and twigs of *Bush Honeysuckle*, (*Diervilla Canadensis*), bruised in water, and the inflamed parts washed with the infusion thus made, will remove the erythematic inflammation caused by the poison vine or poison ivy.

Persons who have been rendered insensible by descending into cellars, wells, caves, privies, or other places containing foul air, whether this be Carbonic Acid gas, or Sulphuretted Hydrogen, should be removed at once, stripped, and the head, neck, chest, and back, be freely dashed with cold water. The lungs should also be emptied of the air they contain, that they may be filled with fresh air; and this may be done by one person pressing the breast-bone firmly toward the back, while, at the same time, another pushes the whole of the belly, covered with both hands, upward toward the midriff; this done, both persons remove their hands suddenly; and this operation may be repeated several times. Warmth should now be applied to the surface of the whole body, as well as stimulating applications, and as soon as the patient can swallow, some Wine, Brandy, or other stimulant should be administered. Currents of electro-magnetism through the chest and along the spinal column, will also be found useful. If vomiting can be excited by tickling the throat with a feather, it will frequently prove beneficial.—(For Snake-bites, Stings of Insects, &c., see "Poisoned Wounds," page 555.)

PART III.

MATERIA MEDICA AND PHARMACY.

MATERIA MEDICA.

MATERIA MEDICA is a term applied to that department of Medicine which treats upon the various remedies, employed in the management of disease, their respective influences on the human system, and their doses, or mode of using. They comprise agents selected from the mineral, animal, and vegetable kingdoms, principally, however, from the latter.

Agents from the vegetable kingdom, consist of roots, barks, leaves, flowers, and seeds, which should be collected at proper seasons, in order to obtain their full medicinal virtues. *Roots of annual plants*, are useless, unless gathered shortly before they are in flower; those of *biennial plants* are most active during the autumn of their first year's growth, soon after the falling of their leaves; while those of *perennial plants* possess their greatest medicinal activity during the fall and spring, or just before and after their vegetation. In the collection of roots, those which are decayed or worm-eaten, should be rejected; while those which are retained, should be washed, and the fibers and little roots, when not essential, should be cut off and thrown away. Large roots should be cut into transverse slices, and dried either by artificial heat, or in a room through which a constant current of air is passing; to prevent them from becoming moldy, they should be stirred and turned every day. Roots which consist principally of fibers, and have but a small top, may be immediately dried. Thick and strong roots may be cut into slices, strung upon threads, and hung up to dry. The tough bark of roots, when inert, should be peeled off before drying. Some roots lose their virtues by drying, but which may be retained for a long time by burying them in dry sand.

Bulbous roots, or *bulbs* are to be gathered at the time of the completion of the new bulb, have their outer covering rejected, sliced, strung upon threads, and dried in a warm, airy room. After roots have been dried, they should be packed away in barrels, or boxes, &c., in order to keep them as free from moisture as possible. Roots, when powdered, generally lose their strength rapidly, and such powders are seldom fit for use after they have become a year old.

Barks should be gathered in the spring and fall, or when they are most readily removed from the trunk or stem; they should be freed from their outer coat, decayed parts, and all impurities, and dried in the same manner

as roots, being careful to keep them as free as possible from a damp atmosphere. Young trees usually afford the most energetic barks. Resinous barks are generally better when gathered in the spring, and those that are gummy, in the fall.

The *stems* of herbaceous plants and twigs are most active between the time of shooting out their leaves and flowering; woody stems during the Winter. They are to be dried in the same manner as roots.

Leaves should be collected in dry weather, while the plant is in flower, freed from decayed parts, spread thinly on the floor of a dry room through which there is a constant current of air, and dried as quickly as possible, after which they should be packed in vessels to keep them free from moisture and insects. The leaves of biennial plants should not be gathered until the second year.

Flowers are to be collected in clear, dry weather, just before or immediately after they have opened. They should be dried quickly, and packed away in the same manner as leaves. They must not be dried in the sun, but artificial heat may be used.

Seeds, berries, and juicy fruits are to be gathered when ripe, spread thinly upon the floor of a dry, darkened room, and be frequently turned while drying. Or, fruits and berries may be gathered with the stems to which they are attached, and hung up to dry in bundles. When dried, they should be kept secure from moisture and insects.

Plants present the greatest degree of medicinal activity, when collected in their places of *natural* growth; *cultivated plants*, with the exception of the aromatic herbs, usually have their virtues diminished in a greater or less degree. All vegetable medicines, whether in the crude form, or powdered, should be kept in a dry and dark place, as, for instance, in tin cannisters, which are superior to any other kind of vessel for powders. Crude roots are best kept in well made and covered boxes or barrels. Tinctures, Oils, Syrups, &c., are best kept in glass bottles, whose outsides are painted black, in order to protect the articles from the injurious action of light. All fluid medicines should be kept constantly well corked, or stopped, when not in immediate use.

The constituents of plants which Chemistry has, up to this period, detected, and to which they owe their respective medicinal virtues, are Gum, Mucilage, Starch, Gluten, Fixed Oil, Volatile Oil, Resin, Balsam, Acids, Sugar, Wax, Albumen, Camphor, Alkaloids, &c., &c., which are variously distributed throughout this vast department of Nature, no two plants being found to possess exactly the same constituent formation. These constituents differ materially in their actions upon the system, as do likewise those met with in the animal and mineral kingdoms; and, hence, for the sake of greater convenience, they have been arranged into classes, according to some prominent peculiarity of action, as follows:—

Emetics, medicines which produce a peculiar influence upon the stomach, inverting its natural action, and causing it to vomit or eject its contents by the mouth. In small doses, some emetics prove nauseant, expectorant, and relaxant.

Cathartics, medicines which increase the number of evacuations from the bowels, generally by stimulating some portion of the alimentary canal, and thereby increasing the peristaltic action of the intestines. When their action is very mild, they are termed *Laxatives*, *Eccoprotics*, or *Aperients*; when they occasion three or four stools, they are called *Purgatives*; when their action is severe, accompanied by pain and irritation, they are *Drastic purgatives*; when they produce large and copious watery stools, they are known as *Hydragogues*.

Nauseants, medicines which cause nausea, or a disposition to vomit, in which case they frequently prove *expectorant* or *relaxant*.

Expectorants, agents which from their peculiar influence upon the system, facilitate the discharge of mucus and other substances from the air passages.

Pectorals, agents which relieve or cure diseases of the chest.

Relaxants, remedies that relax the tension of muscles, so that they do not respond to the will of the patient; some produce their action being attended with nausea, as *Lobelia*; others, without nausea, as *Gelseminum*.

Stimulants, or *Excitants*, medicines which increase the activity of the system, or of one or more parts. When they excite the whole system, they are termed *general* stimulants; when one or several organs, *local*; those whose effects continue for a long time, are called *permanent*, or *persistent*; while the *diffusible* stimulants exert an action with promptness, but which is of short continuance.

Carminatives, agents which cause the expulsion of wind, and, consequently, allay the pain caused by it.

Stomachics, agents which impart tone to the stomach.

Tonics, agents which gradually give tone and vigor to debilitated organs, or to the whole system. Some produce their results by acting upon the nervous system; while others, as *Iron*, for instance, act by restoring the blood to a healthy condition. *Uterine tonics* are agents which exert an influence upon the female reproductive organs, restoring their healthy functions, when these are deranged.

Antiperiodics, agents which exert an influence antagonistic to that condition of the system which favors the presence of diseases of a periodical character, thereby curing them.

Astringents, remedies which have the property of constringing, or "puckering up" the tissues with which they come in contact, thereby lessening or checking their discharges. When they exert their action upon the external surface of the body, they are termed *Styptics*.

Narcotics, medicines which depress nervous action by their influence upon the brain and spinal marrow; they deaden sensibility, lessen the disposition to move, and produce sleep; in large doses, they act as *sedatives*, frequently causing headache, giddiness, double vision, &c.; in small doses, they generally act as *stimulants*.

Anodynes, medicines which allay or remove pain, by blunting the sensibility of the brain.

Hypnotics, agents which produce sleep.

Sedatives, medicines which diminish the nervous, muscular, and arterial forces, and which are used when there is an exalted action of the functions of either or all of these systems.

Antispasmodics, medicines which have the power of allaying or removing spasms. They vary materially in their mode of action, for while some agents of this class are undoubted stimulants, others again are sedative, or relaxant. Hence, spasms from debility, will require the former, while those due to mechanical irritation, will call for the latter.

Tetanics, agents which by their action upon the nerves, produce twitchings, or convulsive action of the muscles.

Diaphoretics, medicines which promote and moderately increase perspiration; when copious perspiration is produced, the agents causing it are termed *Sudorifics*.

Diuretics, medicines which increase the urinary excretion.

Diluents, watery fluids which increase the fluidity of the blood, thereby lessening the acidity or viscosity of the excretions and secretions.

Refrigerants, remedies which diminish the heat of the body, without influencing the nervous sensibility and energy. A refrigerant effect may be secondarily produced from the action of a cathartic, sudorific, diuretic, or emetic, &c.

Alteratives, medicines which gradually restore health, by acting upon the nutritive system, or by changing or neutralizing morbid or redundant matters in the circulation, and without any sensible increase of perspiration, urine, or other excretions. *Antiscrofulous* medicines, are those which cure scrofula. *Antisyphilitic*, those which cure the venereal disease. *Antiscorbutic*, those which cure scurvy and kindred affections. *Deobstruent*, those which remove obstructions,—this term conveys no definite idea, further than may be had from the word “alterative.”

Discussants or *Resolvents*, agents which discuss, resolve, or disperse tumors.

Aphrodisiacs, agents supposed to excite and promote the sexual propensities.

Antaphrodisiacs, agents which lessen or blunt the sexual propensities.

Emmenagogues, medicines supposed to have the power of exciting or promoting the menses. The greater number of agents arranged in this class are *uterine tonics*.

Parturifacients, or *Parturients*, medicines which promote labor, by arousing the contractions of the womb.

Abortives, or *Ecbolics*, agents which produce abortion.

Anthelmintics, *Vermifuges*, or *Helminthagogues*, medicines which remove worms. They may act by mechanically destroying the worms, by poisoning them, by removing the mucus which is necessary to their presence, or, by giving tone to the stomach and bowels, and thus preventing their further development.

Antacids, agents which neutralize acidity of the stomach.

Antalkalies, agents which neutralize alkaline preparations.

Antilithics, or *Lithontriptics*, remedies supposed to prevent the formation of urinary calculi, as well as to dissolve them. Urinary calculi are owing to morbid conditions of the system, and when these are removed and health restored, any further calculous deposits will cease; but it is very doubtful, whether any agents are known which, when taken by mouth, possess the power of dissolving stone in the bladder.

Disinfectants, agents which are capable of neutralizing offensive or unhealthy effluvia.

Antiseptics, agents which remove putrefaction.

Demulcents, bland substances which soothe irritated or inflamed parts, and by lubricating them afford protection against irritating matters.

Emollients, agents applied externally which soften and relax tense and inflamed surfaces; and the influence of which may extend to deeper seated parts.

Detergents, remedies which deterge or cleanse parts, as wounds, ulcers, &c., stimulating them to healthy conditions.

Suppositories, solid medicinal substances of a conical or cylindrical shape, which are designed to be introduced into the rectum for the purpose of relieving constipation, overcoming stricture of the rectum, or removing piles, &c.

Errhines, or *Sternutatories*, agents which, when snuffed up the nose, cause sneezing and a more or less copious discharge of mucus.

Sialagogues, remedies which increase the discharge of saliva

Rubefacients, agents which cause a redness of the skin.

Epispastics, or *Vesicants*, agents which inflame the skin, and raise the epidermis, inducing a vesicle or blister.

Escharotics, or *Caustics*, articles which corrode, burn, or disorganize the animal tissues; escharotics give rise to an eschar or slough. When a substance forms an ulcer, without an eschar, from which a discharge of pus or matter takes place, it is called a *Suppurant*.

Counter-irritants, *Derivatives*, *Revellents*, or *Revulsives*, are agents which by increasing the action of one part, or irritating it, will determine from and relieve morbid conditions of another part. This action may result from the use of cathartics, emetics, sudorifics, epispastics, &c. When these agents are used externally, it is more commonly called *counter-irritation*; when internally, *revulsion*.

N. B. For a botanical description of the plants herein named, common to this country, the reader is referred to "Wood's Class-Book of Botany," "Gray's Botany of the Northern United States," and the author's "American Dispensatory." The common names of the various medicinal agents are given in capitals, and their botanical or systematic names, in italics.

Unless otherwise mentioned under the head of each article, the *infusion* or *decoction* is to be made by placing one ounce of the plant, bruised, in a pint of water, and steeping, or boiling it; the *tincture*, by adding an ounce of the powdered article to a pint of alcohol, brandy, or diluted spirit, and allowing it to stand for twelve or fourteen days, frequently shaking; and the *essence*, by dissolving one ounce of an essential oil in a pint of alcohol. It is better, however, to purchase all tinctures, essences, oils, extracts, pills, syrups, &c., of a druggist who has them properly prepared.

ACETIC ACID. *Acidum Aceticum*. This is a clear, colorless liquid of a very sour, acrid taste, and a strong, rather agreeable odor; it dissolves volatile oils, resins, albumen, &c., unites readily with water, but only partially with alcohol. It is stimulant, vesicant, and escharotic, and may be used externally as a counter-irritant, applied on muslin or blotting paper. Applied to warts it destroys them, as well as corns. Its vapor is useful in headache when snuffed up the nostrils. One part to seven of water forms an excellent vinegar.

ACONITE. *Aconitum Napellus*. This is a perennial plant, also known by the name of *Monkshood*; the leaves and root are the parts generally used; it possesses anodyne, sedative, and diaphoretic properties, and is useful in all febrile and inflammatory diseases, gout, neuralgia, and epilepsy. Its influence is more especially manifested in the more severe forms of fever and inflammatory diseases. The best preparations are an Alcoholic Extract of the root, or a Tincture. The dose of the Extract is one-eighth of a grain, two or three times a day; of the Tincture from three to five drops every one, two, or three hours. When improperly given in large doses it produces alarming and fatal symptoms. *Aconitina* is the name of its alkaloid, which is a white or brownish substance, and has never been used internally on account of its highly poisonous action.

ALCOHOL. Alcohol is the result of vinous or alcoholic fermentation in the juices of many vegetables, or in their infusions. It exists in a greater or less quantity in cider, beer, whisky, rum, brandy, gin, wines,

&c., and is their stimulating and intoxicating constituent. When alcohol is pure, containing no water, it is called *absolute alcohol*; the ordinary alcohol of the shops contains a certain per centage of water, but is generally of sufficient strength for all medical and pharmaceutical purposes. It is capable of dissolving a great number of substances, and especially most of the active principles of medicinal plants; and forms ethers with several acids. Its principal use in medicine is in the preparation of tinctures, essences, extracts, &c.; also as an external stimulant, when it is applied and prevented from evaporating by placing a compress over it; or, as a refrigerant, when evaporation is allowed. In the form of wines, brandy, &c., it is often used internally as a stimulant in cases of great prostration, or great depression of the vital forces; it should never be used internally unless diluted. When deprived of its odor, it is called *deodorized alcohol*. One part of water to two of the alcohol of the shops, forms *diluted alcohol*, or *diluted spirit*.

ALLSPICE. This is the dried unripe berries of the *Myrtus Pimenta*, a South American tree. It is an aromatic stimulant and carminative, and is used in cases of flatulency, and to render other medicines more agreeable. The dose of its powder is from ten to thirty grains; of the tincture from one to two fluidrachms.

ALMONDS. The Almond tree, *Amygdala Communis*, is a tree growing in the warm parts of Europe and Asia, and which yields the *Sweet Almond*, *Amygdala Dulcis*, and the *Bitter Almond*, *Amygdala Amara*. The kernels of the *Sweet Almond* are agreeable to the taste, and yield a fixed oil known as the Oil of Sweet Almonds, which is used as a demulcent in cough, irritation of the intestines, scalding or acrid urine, &c. Its dose is a teaspoonful. The kernels of the *Bitter Almond*, has a taste resembling that of the peach kernel, and yields a fixed oil, and a poisonous essential oil called the Oil of Bitter Almonds, which has been occasionally used as a sedative, in doses varying from a quarter of a drop to a drop. Its poisonous properties are owing to the Hydrocyanic Acid contained in it. An essence of almonds is prepared from it, which is used to flavor cakes and confectionaries.

ALOES. Aloes is the inspissated juice of the leaves of several plants, as the Aloe Spicata of South Africa, Aloe Socotrina of the Island of Socotra, Aloe Vulgaris of Southern Europe and Northern Africa, &c. The A. Spicata yields the Cape Aloes; the A. Vulgaris, the Barbadoes Aloes; and the A. Socotrina, the Socotrine Aloes, which is the medicinal article, the others being used principally in veterinary practice. Aloes yields its active principles to water or alcohol. It is a purgative in doses of five or ten grains, but when repeatedly used is apt to induce piles, or aggravate them when already existing. It forms the basis of the empirical purgative pills, with which the country has been flooded for many years past. It has been much used as a purgative in dyspepsia, constipation, thread-worm, suppressed menses, &c. It should never be given in inflammatory diseases, piles, during pregnancy, nor to females subject to large evacuations from the womb. Its griping properties may be modified by combining it with soap, or Carbonate of Potash. In doses of half a grain or a grain, repeated two or three times a day, it acts as a tonic.

ALUM. *Alumen*. This is a Sulphate of Alumina and Potash, which has an astringent, sweetish taste, and is soluble in twelve or thirteen times its

weight of water. It is used as an astringent in passive hemorrhages, night sweats, diarrheas, and dysentery, in doses of ten or fifteen grains, given in water or syrup, and repeated every three or four hours. Dissolved in an infusion of Marshmallow root, it has also been found useful in the inflammatory stage of gonorrhea. A strong solution is useful as a gargle in sore throat, and falling down of the palate, and as an injection in leucorrhea. The solution or powder acts as a styptic in bleeding from the nose, or from cut surfaces; it should be applied to the bleeding point on lint, or a piece of soft sponge. Thirty or forty grains of Alum at a dose, and repeated every three or four hours, act as a purgative, and are thus useful in painters' colic; if the same dose be repeated every ten or fifteen minutes, it causes vomiting, and has been recommended in some forms of croup. Alum whey, made by boiling Alum in milk, and straining off the thin liquor, has been applied as a poultice over the eye, in common inflammations of that organ. When Alum is exposed to heat until ebullition ceases, it becomes dry, and is then called *dried* or *burnt Alum*, which is frequently used as a mild escharotic, to destroy fungous flesh or "proud flesh."

ALUM ROOT. *Heuchera Americana*. This is a perennial plant common to this country, and having rose-colored or purplish white flowers in June and July. The root is knotty, flattened, yellowish, and of a powerfully astringent taste. The decoction is useful in ulceration of the mouth and throat, and as an injection in bleeding piles, and leucorrhea; it has also been given internally, with advantage, in diabetes. The powdered root forms a good application to foul and indolent ulcers, wounds, cuts, &c. The aqueous extract may be used in chronic diarrhea and dysentery. Dose of the decoction, internally, a wineglass half full, and repeated three or four times a day.

AMBER. *Succinum*. This is supposed to be a fossil resin, the produce of an extinct plant. It is found in Sicily, Prussia, New Jersey, Maryland, &c., and is a light yellowish, or dark yellowish, brittle, translucent, resinous-like substance, emitting a fragrant odor, when heated. When rubbed, it becomes negatively electric. An oil is prepared from it, the Oil of Amber, which is rectified for medicinal purposes, and is usually of a light yellowish or pale color, a disagreeable odor and a pungent taste. It dissolves in eight parts of ordinary Alcohol. Oil of Amber is stimulant, diuretic, and antispasmodic, and has been beneficially administered in hysteria, painful menstruation, whooping-cough, and various spasmodic affections, in doses of from five to thirty drops on sugar, repeated as often as required. Externally it is a rubefacient, and may be used in palsy, chronic rheumatism, and, rubbed along the spinal column, in infantile convulsions. *Roche's Embrocation*, for whooping-cough, and some other spasmodic affections, is composed of Olive Oil, Oil of Cloves, each, one fluidounce, Oil of Amber half a fluidrachm; mix.

AMERICAN HELLEBORE. *Veratrum Viride*. This is a perennial plant common to this country, growing in moist places, and having numerous, yellowish-green flowers from May to July. The root, or rhizome, is the part used, and should be collected in autumn. It is a sedative, and has been found efficient in gout, neuralgia, rheumatism, and other diseases of a febrile or inflammatory character. The Tincture of the fresh root is the best preparation, which may be given in doses of ten drops, three or four times a day, until the pulse is reduced to 65 or 70 beats in a minute. In large doses it

is apt to prove a violent emetic. Norwood's Tincture, which has been considerably used in various acute forms of disease, is a Saturated Tincture of the fresh root.

AMERICAN IPECACUANHA. *Euphorbia Ipecacuanha*. This is a perennial plant, growing in dry, sandy soils, in the Middle and Southern States, which yields a milky juice when broken, and which causes a pustular eruption when applied to the skin. The root is the part used; it is light and brittle, and yields a speckled, light, snuff-colored powder. It possesses emetic, cathartic, and diaphoretic properties. In doses of from ten to twelve grains of the powdered root, it acts as a hydragogue cathartic, and has been used with benefit in dropsy of the chest and abdomen, and in suppression of the menses; in dropsical affections it should be repeated two or three times weekly. Four grains, given every three or four hours, in fevers, will produce diaphoresis. In dyspepsia, one or two grains, given three times daily, will be of service. It is occasionally used in jaundice, and obstinate torpidity of the liver.

AMERICAN IVY. *Ampelopsis Quinquefolia*. This is a woody vine, growing throughout the United States, with toothed leaves, in fives, and flowering in July. It is also known by the names of *Five Leaves*, *False Grape*, *Wild Woodbine*, &c. It possesses alterative, tonic, astringent, and expectorant properties, and is used in scrofula, syphilis, and wherever an alterative is required. It has also been recommended in bronchitis, and other pulmonary complaints. Dose of the decoction, or syrup, from two to four fluidounces, three times a day.

AMERICAN LARCH. *Larix Americana*. This plant, sometimes known by the name of *Tamarac*, is a tree common to moist grounds throughout New England. The bark is said to be laxative, tonic, diuretic, and alterative, and is recommended in obstructions of the liver, rheumatism, jaundice, and some cutaneous diseases; a decoction of the leaves has been used in piles, spitting of blood, excessive menstruation, diarrhea, and dysentery. The dose of the decoction of the bark is from half a wineglass to a wineglassful, from two to four times a day. Equal parts of the bark, Spearmint, Juniper Berries, and Horse Radish, infused in cider or gin, have proved valuable in some forms of dropsy.

AMERICAN SENNA. *Cassia Marilandica*. This is a perennial plant, common to the United States, and growing in low, moist situations. It is a safe and certain cathartic, and may be substituted for the foreign Senna, in doses one-third larger than this.

AMMONIA. This is a clear, colorless gas, possessing an alkaline, acrid taste, and a sharp, suffocating odor, which renders it impossible to be inhaled. It is never used alone in medicine, but in combination with water or acids. The ordinary preparations of Ammonia are as follows:—

1. *Aqua Ammonia*, *Liquor Ammonia*, and sometimes called *Spirits of Hartshorn*, is formed by the union of the Ammonia gas with water, the latter of which will absorb over 650 times its volume of the gas. It is found in commerce of three strengths marked F, FF and FFF. The latter FFF usually called *strong Liquor Ammonia* is colorless, having a powerful ammonia-cal odor, and an alkaline, caustic taste; it is a powerful irritant, and is used externally as a vesicant. It should not be used internally, except when much

diluted, otherwise it acts as a corrosive poison, and when accidentally swallowed, its best antidotes are vinegar or lemon juice, which should be promptly administered. The vials in which it is kept should be well corked, else the solutions will lose their strength, by the escape of the Ammonia. Gondret's *Vesicating Ammoniacal Ointment* is made by gently heating thirty-two parts of lard with two parts of Oil of Sweet Almonds, and when melted pour into a wide mouthed vial, to which add seventeen parts of strong Liquor of Ammonia; shake the mixture together till cold, and keep well corked. If well prepared, it will vesicate in ten minutes.

2. *Aqua Ammonia*, or *Spirits of Hartshorn* is a milder preparation than the above, but has an acrid taste, and a suffocating odor. It is used internally as a stimulant in whooping-cough, delirium tremens, and in prostration from exhausting discharges; as an antacid in heartburn, acid stomach, and sick headache caused by acid stomach; and applied to the nostrils as a stimulant, in fainting, hysterics, headache, &c. As it stimulates the heart and arteries, without unduly exciting the brain, it is useful in those cases where alcoholic drinks would be inadmissible. It is used externally as a rubefacient, in combination with oils. The dose internally is from ten to thirty drops largely diluted with water, and which may be repeated as required.

3. *Carbonate of Ammonia* is a white, fibrous, moderately hard salt, having a powerful ammoniacal odor and taste; when exposed to the air, it loses some of its Ammonia. It is soluble in alcohol, and in about four times its weight of water; boiling water decomposes it. It is used as a stimulant in the low stages of typhoid and typhus fevers, as well as in other prostrated conditions of the system; also in atonic gout and in derangements of the stomach, arising from dissipation. As an antacid, it is useful in all cases attended with acidity of the stomach; and is used in the form of *smelling salts* in hysterics and fainting. The dose internally is from five to twenty grains every three or four hours, in the form of pill, or dissolved in water.

4. *Hydrochlorate*, or *Muriate of Ammonia*, commonly known as *Sal Ammoniac*, is a white, tough, inodorous salt, having an alkaline, acrid taste. It is commonly met with in masses which are convex on one side, and concave on the other; it is friable, and not easily pulverized, unless by boiling a saturated solution of it, and stirring it,—as it cools, it forms small grains, which, when dried, are readily powdered. It becomes moist in a damp atmosphere. It is dissolved in three parts of cold water, causing an increased cold during its solution; one part of boiling water dissolves it. In doses of from five to thirty grains, in sugar, syrup, or mucilage, repeated three or four times a day, it acts as a stimulating alterative, and has been found useful in all tuberculous diseases, scrofula, rheumatism, uterine diseases, and all chronic affections of mucous or serous tissues. In large doses it produces dangerous symptoms. The solution in water has been used externally in indolent tumors and ulcers, bruises, chilblains, chronic affections of the eyes, itch, erysipelas, and other cutaneous diseases. A solution of it in vinegar and water, is useful to allay excessive heat of the head in inflammation of the brain. As a wash for ulcers, or as an injection in leucorrhœa, from one to four drachms of the salt may be dissolved in a pint of water.

AMMONIAC. Gum Ammoniac is the concrete juice of a perennial, umbelliferous plant, the *Dorema Ammoniacum*, growing on dry gravelly soils in Persia, and which exudes from the plant after having been pierced by a beetle-like insect. It is a gum-resin, and is met with in irregular, globular tears, of an external yellowish color, whitish internally, of a characteristic odor, and a sweetish, bitter, and acrid taste. Vinegar, alcohol, ether, and

alkaline solutions partially dissolve it; water forms an opaque milky emulsion on being rubbed with it. It possesses stimulant and expectorant properties, and has been advantageously used in cough, chronic catarrh, asthmatic affections of old persons, and in debilitated conditions of the mucous membrane of the air-tubes. It has been advised in chronic menstrual suppression and hysterics. The dose is from ten to thirty grains in the form of pill, or in an *emulsion*, made by rubbing two drachms of the gum-resin, with half a pint of water. It has also been applied in the form of a plaster to various indolent tumors, as a stimulant and resolvent.

ANISE. *Pimpinella Anisum*. This is a perennial plant, native of Egypt; the fruit, called *aniseed* is aromatic and carminative, and is used in flatulent colic and nausea, and is also added to other medicines, to render them more agreeable. They contain an oil which is soluble in alcohol, forming the *Essence of Anise*, which is used in flatulency, and, combined with Aqua Ammonia, in spasmodic cough. The dose of the powdered seed is from twenty to forty grains; of the oil from five to fifteen drops; of the essence from twenty to sixty drops in sweetened water. The *essence* is formed by dissolving one fluidounce of the oil in nine fluidounces of alcohol. Half a fluidounce, mixed with a fluidounce, each, of Laudanum, and Aqua Ammonia, forms a pleasant mixture for cough; to be given in doses of from twenty to sixty drops.

ARNICA. *Arnica Montana*. This is an European and Siberian perennial plant, growing in moist, shady places. The flowers are generally used in the form of tincture. It is known by the name of *Leopard's bane*. It is commonly used as an external stimulating application to bruises, and local inflammations, either in the form of a poultice of the leaves or tincture. In small doses internally, it quickens the pulse, increases the urinary discharge, and promotes perspiration, and has been occasionally used in typhoid fever, and other acute diseases, accompanied with prostration. The Extract of Arnica is also used internally, in doses of five or ten grains three or four times a day, and, as a local application to bruises, sprains, and chronic rheumatic affections.

ARROWROOT. This is a starch prepared from a West Indian plant, the *Maranta Arundinacea*; it is in the form of white, easily powdered grains of various sizes, inodorous, nearly tasteless, and forms a jelly with boiling water, which is much used as a diet for children, and during convalescence from exhausting diseases. Add a little cold water to a half table-spoonful of arrowroot, and mix this well together with the water, by rubbing with a spoon; then add sufficient boiling water to make half a pint, stirring constantly until a soft, mucilaginous substance is formed, and lastly boil for five minutes. It may be made more palatable by adding a little sugar, or lemon juice, fruit-jellies, &c., but no astringents must be added to it as cinnamon, port wine, &c., as they precipitate the starch. When prepared for infants, milk is generally used instead of water.

ARROW WOOD. *Viburnum Dentatum*. A small shrub growing in low damp grounds throughout the United States. Its bark is ash-colored, and is employed as a diuretic and detergent, and has been highly recommended as an internal and external agent in cancer. The infusion may be used freely. It may also be used in extract, pills, or plaster.

ASSAFETIDA. This is the concrete juice of the root of a Persian plant, the *Ferula Assafetida*, or *Narthex Assafetida*, obtained by slicing the root, and scraping off the milky exudation as it hardens. It is a gum-resin, and is found in masses of various sizes, rather soft, of a dull yellowish-brown, or reddish color, difficult to pulverize except in very cold weather, of an offensive, garlicky odor, and an unpleasant, peculiar, somewhat acrid taste. It is stimulant, antispasmodic, and expectorant; and should not be used in inflammatory diseases. It has been used with benefit in hypochondria, hysterics, spasmodic nervous diseases of females, and various irregular nervous disorders. Combined with Sulphate of Morphia and Sulphate of Quinia, it is useful in sick or nervous headache; with Podophyllin and Extract of Black Cohosh, in chorea. It has also been used in spasmodic asthma, whooping-cough, infantile cough, neuralgic dysmenorrhea, and whenever there is a want of nervous energy. Injected into the rectum, it removes the thread or pin worms. The dose in powder or pill, is from five to ten grains; of the tincture, made by macerating four ounces of Assafetida in two pints of rectified Alcohol, from thirty to sixty drops. Water separates the resin, and makes the tincture milky.

BALM. *Melissa Officinalis*. This is a perennial plant, common to Europe and this country, and which should be gathered just before flowering. It is moderately stimulant, and diaphoretic. A warm infusion is of service in febrile diseases, causing perspiration, and promoting the action of other diaphoretic medicines; it is also used to assist menstruation, and to relieve painful menstruation. It may be drank freely; in fevers, the addition of lemon juice will render it more agreeable.

BALM OF GILEAD. *Populus Candicans*. A tree growing in the northern parts of the country. The buds are considered stimulant, tonic, diuretic, and antiscorbutic. A tincture of them, in doses of from one to four fluidrachms, has been of service in affections of the chest, and kidneys, scurvy and rheumatism. Steeped in oil or Lard, they form an ointment said to be useful in some cutaneous diseases, wounds, bruises, tumors, local rheumatism, &c. The buds of the Balsam Poplar, or Tacamahac *Populus Balsamifera*, possesses similar virtues; its bark is tonic and cathartic, and is said to have proved of service in gout and rheumatism, taken internally.

BALMONY. *Chelone Glabra*. A valuable perennial, medicinal plant, common to the United States, having no odor, but an exceedingly bitter taste. It is tonic, cathartic, and anthelmintic. As a cathartic it is beneficial in jaundice, disorders of the liver, and worms. In small doses, it forms an excellent tonic in dyspepsia, loss of appetite, debility of the digestive organs, and during convalescence from debilitating diseases. The dose of the powdered leaves is one drachm; of the tincture one or two fluidrachms; of the decoction one or two fluidounces. For worms, the decoction should be used internally, and by injection combined with Tincture of Assafetida. An ointment made of the fresh leaves forms an excellent application to painful and inflamed tumors, irritable and painful ulcers, inflamed breasts, piles, &c. An extract will also be found valuable.

BALSAM COPAIVA. This is an oleo-resinous juice, obtained from a South American tree, the *Copaifera Officinalis*. It is a clear, transparent, sometimes yellowish fluid, not quite as thick in consistence as new honey, having a peculiar, resinous odor, and a nauseous, acrid, persistent taste. It

is soluble in alcohol, fixed and volatile oils, and ether, and forms a solid mass after being triturated for some time with magnesia. It is frequently adulterated with Castor Oil, Oil of Turpentine, &c. Balsam of Copaiba is a stimulating diuretic in doses of from twenty to sixty drops two or three times a day, and is beneficial in chronic gonorrhea, gleet, irritable conditions of the bladder, chronic catarrh, chronic bronchitis, and painful piles. The addition of Liquor Potassa increases its efficacy in gonorrhea. With many persons its use occasions an eruption on the skin, with formication and itching. As an external application it has been found useful in fistulous ulcers, the callous walls of which it softens; also in indolent ulcers, chilblains, &c. Its unpleasant taste requires it to be taken in some vehicle which will cover this, as, in some aromatic water, in the form of pill, in combination with other agents, or in the form of capsules. Large doses act as a cathartic, and frequently cause painful and disagreeable symptoms. It should not be used in active inflammations. As it does not contain Benzoic Acid, it is not properly a *balsam*. *Solidified Copaiba* is made by mixing a drachm of recently prepared Magnesia with two ounces of Copaiba; when the mass assumes a pilular consistence, it may be divided into two hundred pills, of which from two to five may be taken two or three times a day.

BALSAM PERU. This is the juice of a South American tree, the *Myrospermum Peruiferum*, which is obtained by making incisions in the bark, and collecting the juice as it flows. It is of a dark-reddish color, of a syrupy consistence, a pleasant balsamic odor, and a bitterish, acrid, aromatic taste. It is soluble in alcohol. Balsam of Peru is a stimulating tonic and expectorant, acting principally on mucous tissues. Its internal uses are similar to those of Balsam of Tolu, being given in doses of from ten to thirty drops in mucilage of Gum Arabic, or diffused in water with sugar and yolk of egg. Applied externally alone, or made into an ointment with equal parts of tallow, it forms an excellent application to sore nipples, indolent ulcers, ringworm of the scalp, and some other diseases of the skin.

BALSAM TOLU. This is the juice of a South American tree, the *Myrospermum Toluiferum*, which is obtained in the same manner as the Balsam of Peru. It is a soft, tenacious, pale brown, fragrant substance, becoming harder by age, with a sweetish, balsamic, rather pleasant taste. It is soluble in alcohol, ether, and volatile oils. Its properties are similar to those of the Balsam of Peru; and it has been used in asthma, cough, chronic catarrh, bronchitis, laryngitis, mucous inflammation of the stomach and bowels, chronic diarrhea, and gleet. The dose is from ten to thirty grains, in mucilage or syrup.

BARBERRY. *Berberis Vulgaris*. This is a shrub found along the Atlantic coast from Canada to Virginia. The bark and berries are used. The bark is bitter, and possesses tonic and laxative properties, and has been used in doses of a teaspoonful of the powder in jaundice, chronic diarrhea, and chronic dysentery. The bark from the root is the most efficient. A decoction of the berries forms an agreeable acidulous draught, in fevers, dysentery, diarrhea, cholera-infantum, painters' colic, &c. A decoction of the bark or berries is useful as a wash or gargle in ulcers of the mouth, chronic inflammation of the eyes, and as an injection in leucorrhea. *Berberina*, is the active alkaline principle of the bark; it is a soft, brownish-yellow, bitter mass, soluble in alcohol, though it has been obtained in crystals. It is tonic and laxative in doses of from two to ten or even twenty grain.

BAYBERRY. *Myrica Cerifera*. This plant is common to many parts of the United States, especially New Jersey, growing in damp soils. The bark is the part used; also, the wax which is procured by placing the berries in boiling water, which melts and congeals on becoming cool. The bark of the root is the most active, and should be gathered late in the fall. Bayberry bark is stimulant and astringent in doses of from twenty to thirty grains of the powder; it has been successfully employed in scrofula, jaundice, diarrhea, dysentery, &c. Combined with powdered Blood-root, it forms an excellent application to indolent ulcers, and has been used as a snuff to cure polypus of the nose. In the form of poultice alone, or combined with Elm, it is of service when applied to scrofulous tumors or ulcers. The decoction forms an excellent wash for sore mouth and throat, for tender, spongy, and bleeding gums, and is of service as an injection in leucorrhea. *Bayberry Wax* is of a pale, grayish-green color, nearly inodorous, and slightly bitter; it is insoluble in ether, alcohol, or water, but boiling alcohol dissolves it. It is astringent and slightly narcotic, and has been successfully used in powder in epidemic typhoid dysentery, the dose being one drachm, and repeated three or four times a day. It has also been used in the form of ointment and plaster to scrofulous and other ulcers. *Myricin* is the dried alcoholic extract of the bark; it is a light grayish-brown powder, soluble in alcohol and in water to which ammonia has been added. It has the virtues of the bark in doses of from two to ten grains, and may be used in the diarrhea of consumption, in typhoid dysentery, and in the same diseases in which the bark is given. Combined with Geraniin, it will be found very serviceable in chronic diarrhea, and cholera.

BEECH DROPS. *Orobanche Virginiana*. This is a parasitical plant, found in various parts of North America, growing upon the roots of beech trees. The plant has a nauseously bitter and astringent taste, and has been used beneficially in various hemorrhages, diarrhea, erysipelas, &c. It is also beneficial as an application to obstinate ulcers, gangrenous ulcers, and leucorrhea; its decoction may be used in gleet, and as a wash in ulcerated mouth. The dose of the powder is from ten to fifteen grains. It is said to be injurious when applied to scrofulous ulcers.

BEEF'S GALL. *Fel Bovinum*. Ox-gall when dried by spontaneous evaporation forms a tonic and laxative substance, which has been successfully used in torpor of the liver, jaundice, dyspepsia, colic, costiveness, diarrhea, &c. The dose is from one to ten grains. Five parts of dried gall neutralize the constipating and narcotic effects of one part of opium, without injuring its sedative influence.

BELLADONNA. *Atropa Belladonna*. This is a perennial plant, native of Europe, having a faint odor, and a sweetish, rather nauseous taste. In large or improper doses, it is an energetic narcotic poison. In medicinal doses, it is anodyne, antispasmodic and calmative, being exceedingly valuable in spasms, epilepsy, neuralgia, whooping-cough, St. Vitus' dance, amaurosis, rheumatism, dysmenorrhea, rigid os uteri, and all diseases in which the nervous system is involved. It is considered as a preventive of scarlet fever by some practitioners. The dose of the leaves, in powder, is one or two grains, once or twice a day; of the extract, from one-eighth to one-half a grain. The extract is also used in the above diseases, and also as a local application, for dilating the pupil of the eye in various operations on that organ, to remove spasmodic stricture of the urethra, neck of the bladder,

and anus, rigid os uteri, phymosis, chordee, &c. *Atropia* or *Atropine* is the name given to the alkaline principle of Belladonna; it possesses properties in common with those of the plant, but in a much more concentrated degree, and is generally used only as a local application in neuralgic affections, and to dilate the pupil of the eye. Its dose internally is from one-twentieth to one-fortieth of a grain.

BENZOIN. This is the concrete juice of a tree growing in Sumatra, Borneo, &c., the *Styrax Benzoin*, and is obtained by making incisions into the bark of trees six or seven years old, and collecting the exuded juice after it has hardened. Benzoin is of a whitish or reddish-brown color, very brittle, of a sweet, balsamic, rather acrid taste, and an agreeable odor when rubbed. When pure, it is wholly soluble in Alcohol or Ether. It is stimulant and expectorant, and is used in coughs, and mucous irritations; to improve the taste of other medicines; as an application to wounds, in tincture, and to assist in the manufacture of *Court plaster*. A preparation has been recently used with some degree of success in hemorrhages, called *Pagliari's Hemostatic* or *Styptic*. It is made by boiling together for six hours in a glazed earthen vessel, Alum one pound, Tincture of Benzoin eight ounces, water ten pounds. As the water evaporates, it must be constantly replaced by hot water, so as not to interrupt ebullition, and the resinous mass must be stirred constantly. Then filter the fluid and keep in stoppered bottles. It is limpid, color of champagne, styptic in taste, and aromatic in odor. White resin has been successfully substituted for Benzoin. Every drop of this fluid poured into a glass containing human blood, produces an instantaneous magma; and by increasing the proportion of the styptic to the quantity of the blood, a dense, homogeneous, blackish mass results. It is said to be useful in all arterial and venous bleedings. In applying it, lint and bandages should be used to prevent the coagula which forms from being removed from the mouths of bloodvessels; an application of them for 24 or 48 hours is sufficient.

Benzoic Acid is prepared by heating or subliming Benzoin; it is in silky feathery crystals, white and soft, is soluble in Alcohol and fixed oils, and is said to be useful in the phosphatic form of gravel, and, combined with Carbonate of Potassa, in gout and rheumatism. The dose is from ten to thirty grains.

BETHROOT. *Trillium Pendulum*. This is a perennial plant, common to the Middle and Western States, and growing in rich soils. There are several species, all of which possess analogous medical properties. The root is astringent, tonic and antiseptic, and has been efficient in bleeding from the lungs, kidneys, womb, and stomach, excessive menstruation, cough, asthma, and difficult breathing; and, boiled in milk, in diarrhea and dysentery. It may be used in powder or strong infusion; the dose of the former is one teaspoonful,—of the latter, from two to four fluidounces. The decoction is also useful as a local application to ulcers, and sore-mouth, and as an injection in leucorrhea and gleet. The root, made into a poultice, is of service in tumors, indolent or offensive ulcers, carbuncle, bubos, stings of insects, and to restrain mortification. An infusion of equal parts of Bethroot and Bugleweed has been highly recommended in diabetes.

BITTER ROOT. *Apocynum Androseamifolium*. This is a perennial plant, common to North America, growing in dry, sandy soil, and exuding a milky juice when any part of it is wounded. The root has a bitter taste,

and is laxative and tonic. It has been found very efficient in dyspepsia, chronic affections of the liver, constipation, and in typhoid diseases. The dose of the powder is twenty or thirty grains as a laxative; and five or ten grains as a tonic. Forty or sixty grains will cause vomiting, without much nausea or muscular relaxation.

Apocynin, is the name given to an oily preparation, as well as to a powder, obtained from the plant, each of which is supposed to contain its active principles. One or two grains of the powdered preparation, or from one to four grains of the oleo-extract, are the doses.

BISMUTH. The only preparation of this metal used in medicine, is the *Subnitrate of Bismuth*, also known as the *White Oxide*, *Trisnitrate*, and *Nitrate of Bismuth*. It is a white heavy powder, without odor, nearly tasteless, insoluble in water, but quite soluble in nitric acid. The hydrosulphurets blacken it, as well as light, when it contains silver. The Subnitrate of Bismuth has a very soothing influence upon irritated mucous surfaces, or when these are in a state of chronic inflammation; hence it has been very useful in some forms of dyspepsia, chronic inflammation of the stomach, heartburn, water-brash, colliquative diarrhœa, &c. In chronic diarrhœa it has been found serviceable in doses of ten or twenty grains every hour or two; in the diarrhœa attending typhus and consumption, five grains of the subnitrate combined with three grains each, of Magnesia and Gum Arabic, has proved efficacious,—the dose to be repeated every four or six hours. It is considered tonic and antispasmodic also. In large doses it causes unpleasant symptoms, for which the remedies are, albuminous and mucilaginous drinks, milk, leeching, injections, and warm fomentations, perhaps diluted Nitric Acid would also be useful. The granular, amorphous, hydrated oxide of bismuth must not be used in medicine; it may be known from the subnitrate by the crystalline character of the latter, under the microscope; when using bismuth, the stools are generally black. The *Valerianate of Bismuth* is a white, amorphous powder, with a strong valerian odor; it has been highly recommended in dyspepsia with nervous irritability, in doses of one or two grains, in pill form, repeated four or five times a day.

BITTERSWEET. *Solanum Dulcamara*. This is a woody vine, common to Europe and this country, the root and twigs of which are used in medicine. It possesses feebly narcotic, alterative and diuretic properties, and has been used in scaly cutaneous diseases, syphilitic affections, rheumatism, scrofula, jaundice, and obstructed menstruation. The dose of the decoction or syrup is one or two fluidounces; of the extract, from two to five grains. The decoction is reputed antaphrodisiac, and has proved of service in mania in which the sexual desires were strongly manifested. A very efficient syrup for scrofula is prepared from the twigs of Bittersweet, Stillingia, and Yellow Dock root, each equal quantities. Made into an ointment with lard, it forms an excellent discutient to painful tumors, and has been efficacious when applied to ulcers, erysipelatous affections, and some forms of cutaneous disease. *Solanina* is the name of its active alkaline principle, but has not been used in medicine. In large doses, Bittersweet causes nausea, vomiting, drowsiness, &c.

BLACK ALDER. *Prinos Verticillatus*. This shrub is common to the United States, the bark and berries being the parts used. The bark is tonic, alterative, and astringent, and has been used with good effect in jaundice, diarrhea, diseases connected with a debilitated state of the system, and in

mortification. An infusion of two parts of the powdered bark, and one part of Golden Seal, forms an excellent agent in dyspepsia; the dose being a wineglassful, when cold, repeated four or five times a day. Externally, the decoction forms an excellent local application to ill-conditioned ulcers, chronic cutaneous eruptions, mortification, &c. The dose of the powdered bark is from half a drachm to a drachm; of the decoction, from two to four fluidounces. The berries are cathartic, vermifuge and tonic, and form, with cedar apples, a pleasant and effectual worm medicine for children.

BLACKBERRY. *Rubus Villosus*. This shrub is common to the Northern United States. The bark of the root is tonic and strongly astringent, and in powder, or decoction, it has been found an excellent remedy in diarrhea, dysentery, cholera-infantum, relaxed conditions of the intestines in children, passive hemorrhage from the nose, stomach, or womb, and in diarrhea attending consumption and hectic fever. Used as an injection, the decoction is useful in gleet, leucorrhea, and prolapsus of the rectum, or of the womb; in the latter, it may be used alone, or combined with the internal use of a decoction of equal parts of Black Cohosh and Blackberry Roots, taken freely. The red raspberry, *Rubus Strigosus*, and Dewberry, *Rubus Trivialis*, possess similar properties. The red raspberry leaves are more commonly used. Blackberries form an excellent syrup, which is of service in dysentery. Water flavored with raspberry syrup, is a very agreeable and salutary drink for patients during fevers, also in the convalescent stage; raspberry jelly or jam is also useful. Blackberry jelly is better suited to cases of diarrhea, dysentery and summer complaint. The dose of the powdered root-bark of these plants, is from twenty to forty grains; of a decoction, from one to four fluidounces several times a day.

BLACK COHOSH. *Cimicifuga Racemosa*. Also known by the name of *Rattle-root*. Is a perennial plant common to rich grounds throughout the United States. The root is the part used, and should be gathered early in autumn, and dried in the shade. It has a faint, unpleasant odor, and a bitterish, somewhat acrid and astringent taste. This is a very active and useful agent, the exact influences of which upon the system are not well understood. It appears to be slightly narcotic, antispasmodic, alterative, and to exert a marked influence on all the tissues of the system, more especially in nervous, scrofulous, and uterine diseases. It has been successfully employed in St. Vitus' Dance, convulsions of a periodical character, epilepsy, asthma, pertussis, nervous excitability, and delirium tremens; also in consumption, cough, acute rheumatism, neuralgia, scrofula, phlegmasia dolens, all derangements of the menstrual function, leucorrhea, &c. As an antiperiodic it has proved decidedly beneficial in intermittent and remittent fevers, especially among children, where there exists a marked tendency to affections of the brain; it uniformly lessens the force and frequency of the pulse, soothes pain, allays irritability, and lessens the disposition to irritation and congestion of the brain. The best preparations are the tincture, and alcoholic extract; the dose of the former varies from five to sixty drops; that of the latter, from one to ten grains, three times a day. Persons subject to cramps will be speedily and permanently relieved by the employment of the extract combined with the Extract of High Cranberry Bark. The warm decoction is frequently used instead of Ergôt, during labor, in order to promote the contractions of the womb, when they grow weak. The fluid extract is another excellent mode of preparing it for use, and may be taken in doses of from half a fluidrachm to two fluidrachms. In overdoses

it is said to cause vertigo, impaired vision, nausea, vomiting, and an abatement of the pulse, but no serious narcotic influence.

Cimicifugin, or *Macrotin*, is the name given to a preparation obtained from it, by adding water, or a solution of Alum to a saturated tincture of the root; it falls as a dark brown or yellowish precipitate. It is used in the same diseases as the tincture or extract, in doses of from one to six grains three times a day. Combined with some of the uterine tonics, as Senecin, Asclepidin, Caulophyllin, or Aletridin, it proves very efficacious in diseases of the female reproductive organs, and forms a pill of much utility in painful menstruation, cramps, especially during pregnancy, spasmodic diseases, flatulent and bilious colic, &c., when mixed with equal parts of Extract of High Cranberry bark, and Dioscorein.

Prof. E. S. Wayne, one of our most thorough chemists, has made a superior article from Black Cohosh root, which possesses all its medicinal virtues in a concentrated form. Upon a spontaneous evaporation of the saturated tincture, a solid mass is precipitated, which, (after removing any remaining fluid), is dissolved in alcohol; this alcoholic solution is then gradually evaporated to the consistence of syrup, placed upon glass in thin layers, and then dried, forming thin scales, having the odor, taste, and virtues of the root.

BLACK HAW. *Viburnum Prunifolium*. A small tree growing in the Middle and Southern States. Its bark, and especially that of the root, is tonic and astringent. A decoction has been used in chronic diarrhea and dysentery, and in palpitation of the heart; and has also been useful as a gargle in ulcers of the mouth and throat, as a wash to indolent ulcers, and chronic inflammation of the eyes, and as an injection in leucorrhea, and relaxation of the vaginal walls. It also acts as an uterine tonic, and has been of service in females subject to frequent miscarriages, using it a few weeks prior to the aborting period, and continuing its use throughout the remaining term of pregnancy. It has proved efficacious in allaying the severity of after-pains. Dose of the powder, from half a drachm to a drachm; of the decoction, a table-spoonful several times a day.

BLACK PEPPER. *Piper Nigrum*. A perennial vine, growing in various parts of the East Indies, the dried unripe berries of which, form the Black Pepper of commerce. They are stimulant, and used to correct flatulence, and arouse debilitated stomachs, in doses of from five to twenty grains. It is very common as a condiment.

Piperin is a yellow crystalline substance prepared from Black Pepper, having no odor, and but little taste. It has been used in fever and ague, colic, diarrhea and scarlet fever, flatulency, &c.; its dose is from one to eight grains.

BLACK WILLOW. *Salix Nigra*. Also known as *Pussy Willow*. This is a tree found in some parts of the Northern States, along the banks of rivers, especially in New York and Pennsylvania. The branches are much used in making baskets, &c. The bark is rough and blackish, and when powdered and simmered in cream, forms an excellent poultice in mortification, and foul and indolent ulcers. Internally it is a bitter tonic, and has been used in fever and ague. The buds or aments, in decoction, and drunk freely, is a powerful antaphrodisiac, suppressing sexual desires for a long time, and is highly recommended in the treatment of spermatorrhea.

BLOODROOT. *Sanguinaria Canadensis*. This is a perennial plant, found in rich light soil, in most parts of the United States. The dried root has a faint odor, and an acrid, bitterish taste. It is a stimulant narcotic, emetic, expectorant, alterative, escharotic, and errhine, and exercises a powerful influence on the system. From three to five grains every three or four hours, stimulates the digestive organs, and accelerates the circulation; ten or twenty grains act as an emetic, with depression of the pulse; half a grain to two grains is the dose as an alterative; five to ten grains causes nausea. Overdoses cause alarming symptoms. It has been successfully used in pulmonary and liver affections, catarrh, croup, whooping-cough, jaundice, rheumatism, dyspepsia and dropsy of the chest. As a snuff it has been used alone, or with bayberry bark, in headaches, coryza, and nasal polypus. Applied to fungous growths, indolent and ill-conditioned ulcers, and fleshy excrescences, the powder often removes the fungous growth by its escharotic action creating a new and healthy energy in the ulcers. An infusion of the fresh root in vinegar, has cured warts, tetter and ringworm. The Extract of Bloodroot, has been used with benefit in diseases of the air-vessels, liver affections, jaundice, and suppressed menstruation, in doses of from one-eighth of a grain to a grain. It may be advantageously applied as a mild caustic to indolent ulcers, and fistula in ano.

Sanguinarina, is the alkaloid principle of Bloodroot; it is a white, or light yellow substance, of an acrid taste, and soluble in ether or alcohol. Its dose is from one-tenth to one-twentieth of a grain, well rubbed with sugar of milk.

Sanguinarin, the alka-resinous principle, is of a deep reddish-brown color, a peculiar odor, and a nauseously bitter taste; it is a tonic and alterative, and has been used in affections of the liver and lungs, jaundice, rheumatism, &c., in doses of from one-fourth of a grain to two grains. The following forms an excellent pill in liver affections:—Take of Leptandrin one grain, Podophyllin half a grain, Sanguinarin one-fourth of a grain, Alcoholic Extract of Black Cohosh, enough to form a pill; the dose is one pill every night and morning. Derangements of the menstrual function are benefited by a pill composed of one grain of Caulophyllin, half a grain of Sanguinarin, and two grains of Alcoholic Extract of Black Cohosh; the dose is one pill three times a day.

BLUE COHOSH. *Caulophyllum Thalictroides*. This is a perennial plant, growing in low, moist, rich grounds, in various parts of the United States. The root is an uterine tonic, and antispasmodic, and has been successfully used in all derangements of the menstrual function, in rheumatism, colic, cramps, hysterics, epilepsy, &c. The decoction, taken during the last one or two months of pregnancy, renders the labor less tedious and painful, by the tonicity it imparts to the womb; and in cases of lingering labor, occasioned by fatigue, or debility of the womb, it is fully as efficacious as Ergot in accelerating the delivery, without being liable to any objections. In ulcerations of the mouth and throat, it is very efficient, and may be used alone, or in combination with Golden Seal. The dose of the decoction is from two to four fluidounces, three or four times daily; of the tincture from half a fluidrachm to a fluidrachm. The alcoholic extract is also useful in uterine difficulties, and may be combined with Senecin, Cimifugin, Aletridin, or Extract of High Cranberry bark. Its dose is from one to five grains, three times a day.

Caulophyllin is the name given to the concentrated preparation from the root; it is of a light brown color, a peculiar odor, and a slightly

bitterish pungent taste. It appears to influence the uterus directly, and is used in nearly all the chronic affections of this organ, as well as in the same diseases in which the root is used. Its dose is from half a grain to two grains, three or four times daily. It lessens the griping of Podophyllin.

BLUE FLAG. *Iris Versicolor.* This is a perennial plant, growing in low, wet places, in nearly all parts of the United States. The root has a nauseous, acrid taste, and a peculiar smell. It is cathartic, alterative, sialagogue, and diuretic, and has been used with success in scrofula, syphilis, dropsical diseases, chronic affections of the liver, spleen, and kidneys, dyspepsia, rheumatism, constipation, &c. In obstinate affections of various organs, they may be rendered susceptible to the influence of the remedies administered, by first salivating the patient with a mixture composed of equal parts of Blue Flag, Mandrake, and Prickly-Ash bark, of which from five to ten grains may be given every two or three hours, so as to fall short of purging, and which will act as a powerful alterative, causing a copious salivation, without rendering the breath offensive, or injuring the teeth and gums. The dose of Blue Flag, in powder, is from five to twenty grains; of the tincture, from ten to sixty drops; of the alcoholic extract, from half a grain to two grains, three times a day.

Iridin, the oleo-resinous principle of Blue Flag, possesses the active properties of the root, and may be used as an alterative in syphilis, gonorrhea, and other diseases in which the root is used. Combined with Cimicifugin, it is very useful as a laxative and tonic in uterine derangements. Any harshness of action of Iridin, or Blue Flag root, may be lessened or removed entirely, by the addition of a few grains of Ginger, or Capsicum, a grain of Camphor, two or three grains of Caulophyllin, or half a grain of Extract of Hyoscyamus. The dose of Iridin is from half a grain to three or four grains. In some cases, it is preferable as a cathartic to Podophyllin.

BONESET. *Eupatorium Perfoliatum.* This a perennial plant, common throughout the United States, and known also by the name of *Thoroughwort*. The tops and leaves, in cold infusion, powder or extract, is an excellent tonic, useful in remittent, intermittent, and typhoid fevers, dyspepsia, and general debility. The warm infusion is emetic and diaphoretic, and has been efficient in intermittent and other febrile diseases, epidemic influenza, catarrh, colds, &c., whenever a diaphoretic or emetic is required; it is likewise administered to promote the action of other emetics. Externally, it has been used as a fomentation to painful and inflammatory parts, being used either alone, or with Hops, Tansy, &c. Dose of the powdered leaves, from ten to twenty grains; of the extract, from two to four grains; of the infusion, from two to four fluidounces.

BUCHU. *Barosma Crenata.* This is a perennial shrub, growing in Southern Africa. The leaves are the parts used; they are slightly bitter and aromatic, and have a strong aromatic odor. They are stimulant, diuretic, antispasmodic, and tonic, and have been used in catarrh of the bladder, incontinence of urine, connected with disease of the prostate gland, irritation of the bladder and urethra attending gravel, and in all diseases of the urinary organs attended with uric acid deposits. The dose of the powder is from twenty to thirty grains, three or four times a day; of the infusion, from two to four fluidounces; of the fluid extract, one or two fluidrachms.

BUCKHORN BRAKE. *Osmunda Regalis*. This is a beautiful fern, growing in moist grounds in various parts of the United States. During the latter part of May, and in the month of August, the root should be gathered, and, as it is very liable to mouldiness, much care should be used in drying it. It is mucilaginous and tonic. Used in coughs, diarrhea, and dysentery; also used as a tonic during convalescence from exhausting diseases. One root, infused in a pint of hot water for half an hour, will convert the whole into a thick jelly. It is valuable in leucorrhœa, and other female weaknesses, and is said to be an almost certain cure for rickets, in doses of a wineglassful, several times a day. The mucilage mixed with brandy, is a popular remedy as an external application for sprains, and weakness of the back. When used internally, the roots may be placed in hot water, and the mucilage thus formed may be sweetened with sugar, and, when there are no contra indications, it may be flavored with brandy, cinnamon, nutmeg, ginger, &c.

BUGLEWEED. *Lycopus Virginicus*. This is a perennial plant, found in moist and shady situations, in most parts of the United States. It has a slightly bitter taste, and a peculiar balsamic odor. It appears to possess sedative, tonic, and astringent properties; allaying irritation, diminishing the frequency of the pulse, lessening cough, and checking hemorrhages. It has been successfully used in incipient consumption, bleeding from the lungs, stomach, &c., diseases of the heart, chronic diarrhea and dysentery, inflammatory diseases of drunkards, and especially in diabetes. Dose of the powdered leaves, from one to two drachms; of the infusion, from two to four fluidounces.

BURDOCK. *Arctium Lappa*. This is a biennial plant, well known in this country and Europe. The root is alterative and diuretic, and has been efficient in scurvy, gout, leprosy, syphilis, scrofula, and diseases of the kidneys. To be of service, its use must be continued for a long time. An infusion of the seeds is more active than that of the root, and will be found useful in cases where persons are subject to boils, sty on the eye, whitlow, &c. An ointment of the leaves, or their juice, has proved beneficial in cutaneous diseases, and obstinate ulcers. Dose of a decoction, or syrup, a wineglassful several times a day; of the extract, from five to ten grains.

BURGUNDY PITCH. This is the concrete juice or turpentine of the Norway Pine, *Abies Excelsa*, a native tree of Europe and Northern Asia, and of the European Silver Fir tree, *Abies Picea*. It is a gentle rubefacient, and sometimes causes a papillary or vesicular eruption. It is generally applied in the form of a plaster, in weakness of the back, chronic rheumatism, &c., and forms an ingredient of various plasters.

BUSH HONEYSUCKLE. *Diervilla Canadensis*. This is a woody shrub, growing in various parts of the United States. Its roots, leaves and twigs, freely used in cold infusion, are diuretic, astringent and alterative, and have been of benefit in gonorrhœa, inflammation of the bladder, with gravelly deposit in the urine, and in diseases of the kidneys. The root has been recommended in syphilis, in the form of syrup, or decoction. Applied externally to erysipelatous inflammation, or to the inflamed surface caused by the *Rhus Radicans*, or Poison Vine, it soon relieves the itching, burning, &c.

BUTTERNUT. *Juglans Cinerea*. Also known as the *White Walnut*. The inner bark of the root of this well-known tree, is a pleasant and mild cathartic, suited to cases of habitual constipation, and where moderate catharsis is desired. It is usually administered in the form of extract, the dose of which is from ten to thirty grains. *Juglandin* is a jet-black principle obtained from the bark, by adding water to a Saturated Tincture, and distilling off the Alcohol. It is a laxative and cathartic, in doses of from one to five grains; operating more promptly when combined with Castile Soap. The juice of the rind of the Black Walnut, *Juglans Nigra*, is said to have removed ringworm and tetter; and a decoction has been used for a vermifuge. The leaves of the above trees, in strong infusion or extract, has proved as useful in scrofulous affections as the European Walnut.

BUTTON SNAKEROOT. *Liatris Spicata*. This is a perennial plant, common to the United States, having tuberous roots; there are several species which possess analagous medicinal virtues. The roots are diuretic, and in doses of from two to four fluidounces of the decoction, have been efficacious in gonorrhea, gleet, and affections of the kidneys; combined with equal parts of Unicorn root and Bugleweed, a decoction has proved of service in Bright's disease. A decoction of the root forms an excellent gargle in sore throat, and injection in leucorrhea. Said also to be useful in snake-bites.

CALCINED OR BURNT DEER'S HORN. *Cornu Cervinæ Ustum*. In the interval between August and December, the horns of the deer, *Cervus Virginianus*, are said to be in velvet. During this time only, the horns which have fallen, are collected, coarsely rasped, and the raspings placed in a vessel of Iron, which is then tightly covered, and placed in an oven, or elsewhere, where it may be subjected to a heat of 196° or 200° F, continued for about forty-eight hours, or until the rasped horn assumes the color of light chocolate, or roasted coffee, and can be easily powdered by trituration. This effected, let the whole cool, reduce the burnt raspings to powder, and preserve in closely stopped vials.

This preparation is a powerful styptic, and is of much efficacy in floodings from the womb, and in excessive menstruation. In flooding, a teaspoonful of the powder may be added to a gill of hot water, and a table-spoonful of this be given every five or ten minutes; or a teaspoonful of the powder may be given every half-hour. Generally, the first dose, if sufficiently large, diminishes the flow, and it is rarely that over three doses are required to permanently check it.

CAMPHOR. This is a white, shiny crystalline substance, obtained by boiling the wood, roots, &c., of an evergreen tree, growing in the East Indies, the *Laurus Camphora*. Camphor thus obtained, is subsequently purified by sublimation. It possesses a penetrating, peculiar, diffusible odor, and a bitter, pungent, cooling taste. It is soluble in Alcohol, Ether, Acetic Acid, and Fixed and Volatile Oils; and is not easily pulverized, unless a few drops of Alcohol be added to it. Camphor is sedative, anodyne, anti-spasmodic, and diaphoretic, and is used to allay nervous excitement, subdue pain, arrest spasm, and also to induce sleep. It is of much utility in the delirium, tremors, and wakefulness, attending typhoid conditions; and has been advantageously employed in gout, neuralgia, rheumatism, painful menstruation, after-pains, and all irritations of the sexual organs. In large doses, it produces unpleasant symptoms. Combined with Opium, it is of service in chordee, hysteric nymphomania, and painful affections of the urinary

organs. It enters into many liniments and mixtures for external application in bruises, sprains, chilblains, indolent and gangrenous ulcers, and all painful diseases. Its vapor is sometimes useful in headache. Dose of the powder from one to five grains, depending upon the severity of the disease.

CANADA BALSAM. This is a terebinthinate fluid, obtained from the Fir Balsam, *Abies Balsamea*, a tree growing in Canada, Maine, &c. It is a stimulating diuretic, and, in large doses, cathartic; it acts more especially on the mucous tissues, and if its use be persevered in for a length of time, it will create irritation in them, more especially those of the urinary apparatus, frequently occasioning strangury. It has been used in gonorrhea, gleet, piles, leucorrhea, chronic urinary difficulties, rheumatism, chronic catarrhal affections, chronic inflammations, or ulcerations of the bowels, &c. The dose is from ten to twenty drops two or three times a day, in pills or in emulsion. Externally, it is a rubefacient, and is frequently used as a stimulant to wounds and ulcers; it likewise enters into the composition of several ointments and plasters. It is much used in microscopic research, to mount objects, &c. *Balsam of Fir* is a name by which it is sometimes known.

CANADA FLEABANE. *Erigeron Canadense.* This is an annual plant, growing in the northern and middle parts of the United States. The plant, should be gathered while in flower. It possesses diuretic, astringent, and tonic properties, and has been found useful in diarrhea, gravel, diabetes, dropsical affections, painful urination, and in affections of the kidneys. Dose of the infusion from two to four fluidounces, three or four times a day. A volatile oil is prepared from it which has been found serviceable in diarrhea, dysentery, and bleeding from the lungs, stomach, kidneys, &c. In excessive menstruation and floodings, it is a prompt and efficient agent. Dose of the Oil, from four to six drops on Sugar, or dissolved in Alcohol, and given in a little sweetened water, repeating it every five or ten minutes, if demanded. Castor Oil, (or Stramonium Ointment,) five parts, mixed with one part of Oil of Erigeron, makes an ointment of much efficacy in piles.

CANELLA. *Canella Alba.* This is a South American tree. Its bark is an aromatic stimulant and gentle tonic, useful in debility of the digestive organs, &c. It is often added to tobacco, to remove its disagreeable odor when smoked, and to give a pleasant aroma to the atmosphere of the smoking room.

CANTHARIDES. Also called *Spanish Flies*. These insects, *Cantharis Vesicatoria*, are obtained from various parts of Southern Europe. They are diuretic and stimulant, and are occasionally given in chronic gonorrhea, gleet, seminal weakness, paralysis of the bladder, and also in chronic inflammation of this organ. Dose of powdered Cantharides, from half a grain to two grains; of the Tincture, from twenty to forty drops, repeated three or four times a day. In large doses, its use is dangerous, producing painful and violent inflammatory symptoms. Stangury caused by Cantharides, is said to be removed by thirty drops of Liquor Potassa in water, repeated every hour. Applied externally, Cantharides cause redness and vesication, and are much used for this purpose in the form of an ordinary blister plaster.

The Potato Fly, *Cantharides Vittata*, of this country, possesses similar properties with the foreign insect; as also some other species, common to the United States.

CAPSICUM. *Capsicum Annuum*. Also known by the name of *Cayenne*, or *Red Pepper*. This is an annual plant growing in various parts of the globe in hot climates. There are several species, all of which possess similar properties. The fruit or berry is the part used; it has a faint, peculiar odor, and an intensely hot, pungent, and acrid taste. Capsicum is a pure, powerful stimulant, and is much used in warm infusions, in colds, catarrhs, hoarseness, &c. It has also been used to stimulate the stomach in dyspepsia, intermittents, &c., and has been found efficient in some hemorrhages, especially that from the uterus. It may be used in all cases of diminished vital action, and is frequently combined with other medicines to promote their action. Dose of the powder, from one to ten grains, three or four times a day. Externally, the infusion and tincture is useful as a gargle in the ulcerated throat of scarlet fever, or in chronic quinsy; also as a counter-irritant in indolent ulcers, and in chronic ophthalmia. It enters into several stimulating preparations. The *Ethereal Oil of Capsicum*, is prepared by evaporating an ethereal tincture of the pods; it is of a brilliant yellowish color, and filled with crystals of *Capsicin* of curious dendroid forms. It is sometimes used as a rubefacient.

CARAWAY. *Carum Carui*. This is a biennial plant growing in Europe. The seeds or half-fruits are aromatic and carminative, used in flatulent colic, and to improve the flavor of other medicines. The dose is from ten to sixty grains. The volatile oil is more commonly used, in doses of from one to five or ten drops. Both the seeds and oil are much used in cakes and confectionary.

CARDAMOM. *Alpinia Cardamomum*. This is a perennial plant growing on the mountains of Malabar; its fruit or seed is used in medicine. The seeds have an aromatic, warm taste, and a pleasant odor, and impart their virtues to alcohol or water. A volatile oil is obtained from them, possessing properties similar to those of the seed. Cardamom seeds are aromatic and carminative, and are used in flatulency, and also to render medicines more agreeable. They should be allowed to remain in their three-sided capsules, until required for use. Dose of the seeds from ten grains to two drachms.

CASTOR. *Castoreum*. A peculiar substance obtained from the Beaver, which has a nauseous, aromatic taste, and a strong, heavy, peculiar odor. Alcohol extracts its virtues, which diminish by age. Castor is a stimulant, antispasmodic, and emmenagogue, and has been found useful in hysterics, retention of menses, epilepsy, and many nervous affections. Its dose is from ten to twenty grains; of the tincture from half a fluidrachm to two fluidrachms.

CASTOR OIL. *Oleum Ricini*. This oil is obtained from the seeds of the Castor Oil bush, *Ricinus Communis*, by expression, in this country; but in some other places, by decoction or tincture. The oil obtained by expression is the best; it is thick, colorless, faintly odorous, with a nauseous and somewhat sweetish taste, and is soluble in alcohol or ether. When exposed to the air it becomes rancid, thickens, and gradually dries up. The *cold drawn* Castor Oil is considered the best. Castor Oil seeds are dangerous, twenty of them having proved fatal; but the oil obtained from them is a mild cathartic, especially adapted to young children, pregnant females, or after delivery, and is likewise useful in piles, colic, obstinate constipa-

tion, worms, &c. One part of Oil of Turpentine added to three or four parts of Castor Oil, increases its purgative and anthelmintic action. The objection to Castor Oil is its nauseous taste, and tendency to cause sickness at the stomach; which may generally be overcome by adding a small portion of some aromatic oil to it, as Oil of Wintergreen, Sassafras, Peppermint, or Cinnamon, &c. If the dose of Castor Oil be boiled for a few minutes in about a gill of sweet milk, then sweetened with loaf sugar, and flavored with any aromatic, as, Essence of Cinnamon, &c., it forms a mixture very much like custard, which is pleasant to the taste, and will not offend the most fastidious stomach. Castor Oil forms a soap with Soda, which may be made into pills and used as a purgative. Used externally, Castor Oil has proved efficacious in itch, ringworm, and other affections of the skin. The dose of Castor Oil for an adult is, two or three table-spoonfuls; for an infant, one, two, or three teaspoonfuls, according to its age. As an injection, double the above doses may be used, mixed with some mucilaginous fluid.

CATECHU. This is an aqueous extract of the wood of the *Acacia Catechu*, and other trees growing in the East Indies and other parts of Asia. It is met with in dark-brown, irregular, and brittle pieces, inodorous, astringent, and soluble in alcohol. It is a powerful astringent, and is used in chronic diarrhea, chronic dysentery, and hemorrhage from the stomach or bowels. As a wash or gargle it is useful in sore mouth, elongation of the palate, tender and spongy gums, sore and cracked nipples, and indolent ulcers; its infusion may be used in injection in leucorrhea, and gleet, also bleeding from the nose. The dose of the powder is from ten to thirty grains in some mucilage, every three or four hours; of the tincture from a teaspoonful to a table-spoonful.

CATNIP. *Nepeta Cataria*. This is a perennial herb common to this country and Europe; the tops and leaves have a strong, unpleasant, aromatic odor, and a bitterish, rather agreeably aromatic taste, and yield their virtues to boiling water. The warm infusion is diaphoretic and carminative, and is much used as a drink in fevers, colds, and in the acute diseases of infants; it is very useful in the flatulent colic of children. It likewise appears to possess antispasmodic and uterine tonic properties, having proved efficacious in hysterics, nervous headache, painful menstruation, suppressed menstruation, &c. The infusion may be drunk freely. The expressed juice of the herb, in table-spoonful doses, repeated three or four times a day, is a valuable remedy in suppressed menstruation.

CHAMOMILE. *Anthemis Nobilis*. This is a perennial herb growing in Europe, the flowers of which are medicinal. The whitest flowers are the best, they have a pleasant odor, and an agreeably bitter taste. They are tonic in small doses, and are generally used in cold infusion in weak or irritable stomachs, dyspepsia, typhus, &c. The warm infusion is diaphoretic in small quantity, but acts as an emetic when taken freely. The Oil of Chamomile is carminative and antispasmodic, in doses of from five to fifteen drops, on sugar; and has been used in flatulency, colic, cramp in the stomach, painful menstruation, hysterics, &c.

CHARCOAL. *Carbo Ligni*. This is prepared by charring wood when not exposed to the action of the air. The charcoal found in ovens, stoves, &c., is not fit for medical purposes. Charcoal is absorbent and antiseptic, and is very useful in acidity of the stomach, flatulency, constipation, dys-

pepsia attended with fetid breath and putrid eructations, &c. The dose is from twenty grains to half an ounce, repeated as required. Externally, it may be added to poultices to correct the smell of foul or gangrenous ulcers, &c. Charcoal prepared from bread is the best for tooth powders.

CHLOROFORM. *Chloroformum.* This agent was discovered in 1831, by Guthrie of this country, Liebig of Germany, and Souberain of France. It is a clear, colorless, neutral, very volatile fluid, having an odor similar to ether, and a sweetish, warm taste. It is non-inflammable, and readily soluble in ether or alcohol, but not in water. Its range of solvent power is very extensive. When Chloroform is pure, it leaves no stain or odor on a clean sheet of white paper after it has evaporated. It is generally used as an anæsthetic to produce insensibility during surgical operations, and which is effected by inhaling it. A teaspoonful or more is poured on a handkerchief and held to the patient's nose, but not so closely as to prevent the admission of atmospheric air; in a few minutes the inhalation is followed by drowsiness, mutterings, sometimes cough, and insensibility. As soon as the patient becomes insensible, the Chloroform must be removed from the nose, and should be reapplied from time to time during the operation, only as consciousness returns, removing it as soon as this is overcome. Its inhalation has also been used in painful diseases, as hysterics, asthma, neuralgia, lock-jaw, &c. Whenever unpleasant symptoms arise from its inhalation, a bottle of strong Aqua Ammonia should be at hand, and the patient be made to inhale this fluid poured on another handkerchief; the face may also be fanned, cold water applied to the head and face, and frictions made upon the body and limbs. As an anæsthetic agent, chloroform should never be used except under the superintendence of a medical man.

It may be used internally as a sedative narcotic, in asthma, spasmodic cough, neuralgia, hysterics, &c. Externally it has been applied in the form of liniment to various painful affections, as nervous headache, rheumatic, neuralgic, hepatic, nephritic, &c., pains. One part of Chloroform to six of Oil of Sweet Almonds forms a good liniment for these purposes. The dose of Chloroform internally is from ten to sixty drops in mucilage of Gum Arabic, or infusion of Flaxseed, and which may be repeated every hour or two, if necessary.

CHROMIC ACID. *Acidum Chromicum.* This is a very strong acid, in needle-like crystals of a deep red color, highly deliquescent, and very soluble in water. It destroys most animal and vegetable coloring matters, and is a powerful oxidizing agent, yielding half its oxygen readily to oxidizable bodies, and being reduced to sesquioxide. It is erosive in its action, producing pain or burning for a time, but soon becomes inert. It has been recommended in piles, malignant tumors, cancers, warts, &c. It is never used internally.

CINNAMON. This is the bark of several species of tree, growing in Ceylon, Malabar, Sumatra, &c., the principal one being the *Cinnamomum Zeylanicum*. The Cinnamon of Commerce is a stimulant tonic, astringent and carminative, and has been used in flatulent colic, cramp of the stomach, diarrhea, nausea and vomiting, and to improve the flavor of other medicines. In uterine hemorrhage, the tincture of the bark has proved efficacious when given in teaspoonful doses, mixed with sweetened water, and repeated every five or ten minutes, as required. The following has

also proved useful in flooding :—Take of Tincture of Cinnamon, Tincture of Rhatany, Tincture of Ergot, each, one fluidrachm ; Port Wine three fluidounces ; mix. The dose is a fluidounce, as often as required. The Oil of Cinnamon possesses similar properties with the bark. A child who is restless, or very fretful from colicky pains, or wind in the bowels, may frequently be calmed, and made to sleep, by rubbing along its spine a gently heated mixture of ten drops of Oil of Cinnamon added to a teaspoonful of Olive Oil ; the rubefacient power of this mixture may be increased by combining with it ten drops of Aqua Ammonia. The dose of Cinnamon, in powder, is from five to twenty grains ; of the tincture, from ten to sixty drops ; of the essence, from ten to sixty drops.

CITRIC ACID. *Acidum Citricum.* This acid is obtained from Lime juice, or Lemon juice, though it exists in many other fruits. It has a very acid taste, and is soluble in water or alcohol. In solution, citric acid is refrigerant and anti-scorbutic, and forms a very beneficial drink in fevers, scurvy, acid stomach, and some forms of headache. A good lemonade may be made by putting a teaspoonful of the following mixture to a pint of water :—Take of Citric Acid one ounce and a half ; white sugar one pound ; powder these, and mix together with Oil of Lemon five drops.

CLEAVERS. *Galium Aparine.* This is an annual plant, common to Europe and this country, having, when dried, an acidulous, bitterish, astringent taste, and no odor. There are several species, which possess similar properties. The whole herb is used in infusion as a refrigerant and diuretic, in suppression of the urine, gravel, inflammation of the kidneys and bladder, scalding urine, &c. It should not be used in passive diseases. In fevers and all acute diseases it may be used freely, and has been found useful in psoriasis, eczema, lichen, cancer, lepra, and other cutaneous eruptions, also in scrofulous diseases. The best form of administration is that of the inspissated juice, which may be given in one or two teaspoonful doses, three times a day. The infusion is made by adding two ounces of the herb to a pint and a half of warm water, letting them stand for three or four hours, and, when cold, it may be drank freely. During the inflammatory stages of erysipelas, scarlet fever, and other eruptive diseases, a very refreshing and salutary drink may be made of equal parts of Elderblows, Cleavers, and Maidenhair ; this infusion, when cold, may be taken in wineglassful doses, and repeated several times a day.

CLOVES. *Caryophyllus Aromaticus.* This tree is a native of tropical climates. The flowers, collected before they are fully developed, form the Cloves of commerce. They are aromatic and stimulant, and are used in flatulency to give tone to the digestive apparatus, to lessen nausea or vomiting, and to correct the taste or modify the action of other remedies. The dose, in powder, is five or ten grains. The Oil of Cloves is frequently used for the same purposes, and as an external counter-irritant. Its dose is from two to five drops on sugar, or in mucilage. Toothache is frequently relieved by placing into the cavity of the decayed tooth, a piece of cotton, or lint, moistened with the Oil of Cloves.

COCHINEAL. *Coccus Cacti.* This is an insect found in Mexico and the neighboring countries, having a peculiar odor, and a bitter taste. It is anodyne, and has been used with advantage in whooping-cough, neuralgia, and in fevers, to produce sleep. The dose is from five to ten grains, three

or four times a day. Tinctures and ointments are frequently colored by it, and the Carmine of commerce is prepared from it.

COD LIVER OIL. *Oleum Morrhue.* This oil is nutritive and alterative, and has long been a popular remedy in scrofula, chronic rheumatic diseases, consumption, and all affections in which there is an impairment of the digestive, assimilative, and nutritive functions. The dose is a table-spoonful two or three times a day, which may be taken in brandy, claret, or with sugar, in aromatic oils. It is best to begin with teaspoonful doses, and gradually increase them, to avoid nausea and vomiting. It must be used five or six weeks before much advantage will be apparent. Whether Cod Liver Oil really deserves all the encomiums passed upon it, is yet a matter of uncertainty, and will doubtless continue so as long as unprincipled persons adulterate it with lard, or other oils, or manufacture a spurious article; a pure article is now seldom to be obtained.

COLCHICUM. *Colchicum Autumnale.* This is an annual or perennial plant, common to England, the seeds and bulbs of which are used in medicine, and which yield their virtues to alcohol, wine or vinegar. They are sedative, diuretic and cathartic, and have been used in gout, gouty rheumatism, enlarged prostate, gonorrhea, and in some febrile and inflammatory affections. In large doses it is a narcotic poison. It is more generally used in the form of tincture, which see in the Pharmacy. The dose of the powdered bulb is from one to eight grains, every four or six hours.

COLLODION. This is a solution of Gun Cotton in ether. It is a colorless, syrupy fluid, having the odor of ether, and should be kept in well stopped bottles, as it evaporates and becomes unfit for use. It is generally applied, by means of a brush, to cut wounds, abrasions of the skin, burns, leech bites, sore nipples, &c., over which it forms a thin scale, protecting the parts from the action of the atmosphere. The following is said to form a pliable, or flexible film or scale: Take of Collodion thirty parts; Castor Oil, and soft Turpentine, of each, fifty parts; mix.

COLOMBO. *Cocculus Palmatus.* This is a perennial, climbing plant, growing in East Africa, and cultivated in the Isle of France; the root is the part used; it is easily powdered, has a faint odor, and a very bitter taste, which it yields to alcohol, water or ether. The powder should be kept in a dry place, as it absorbs moisture from the atmosphere, and undergoes decomposition. It possesses tonic properties, and is used in dyspepsia, chronic diarrhea and dysentery, convalescence from exhausting diseases, muscular debility of children, and in debility of the digestive organs. Its dose is from ten to thirty grains, three or four times a day; of the infusion, from one to two fluidounces; of the tincture, from one to two teaspoonfuls. The American Columbo, *Frasera Carolinensis*, possesses similar properties in the same doses.

COMFREY. *Symphytum Officinale.* This is an European perennial plant, cultivated in this country. The root is the part used; it has a very faint odor, and a mucilaginous taste. It is demulcent, and slightly astringent, and is of service in diseases of the mucous tissues, and in scrofulous and anemic habits. It has been found useful in diarrhea, dysentery, coughs, bleeding from the lungs, leucorrhea, and female debility. It may be boiled in water, wine, or made into a syrup, and be taken in doses of

from one to four fluidounces, two or three times a day. The fresh root, bruised, forms an excellent application to ulcers, sore breasts, white swellings, fresh wounds, bruises, &c.

COMMON SILKWEED. *Asclepias Syriaca*. This perennial plant, also known by the name of *Milkweed*, is common throughout the United States. Upon being wounded, the plant gives out a milky juice, which, it is said, will cure warts when rubbed upon them. The root possesses diuretic, alterative, emmenagogue, and anodyne properties, and has been used in dropsy, retention of urine, suppressed menstruation, dyspepsia, scrofula, and rheumatism. Both the root and milky juice are anodyne. Dose of the powder, from eight to twenty-five grains; of the decoction, from one to three fluidounces; of the tincture, from ten drops to a fluidrachm.

COPPER. *Cuprum*. Several salts of this metal are used in medicine, the most common of which are the two following:—

1. Subacetate of Copper. *Cupri Subacetas*. This is of a pale green color, has a disagreeable, vinegary smell, and a nauseous, styptic, coppery taste. It is only partially soluble in water, but insoluble in alcohol, and is known by the popular name of *Verdigris*, which name is also applied, but wrongly, to the green rust found on copper vessels used in kitchens, &c., this being a carbonate of copper. Subacetate of copper is used as an escharotic and detergent, to remove warts and fungous growths, and as an application to foul ulcers, ring-worm, disease of the eye-lids, &c.; it is sprinkled in the form of powder, on the surface, or it may be used in the form of ointment. When taken internally it is poisonous, and the best antidotes are white of eggs, and a free use of sugared water. A moderate heat removes its water of crystallization, in which form it is best used as an escharotic; too great a heat decomposes it, driving off the acetic acid, and leaving the oxide of copper.

2. Sulphate of Copper. *Cupri Sulphas*. This salt, also known as *Blue Vitriol*, is usually met with in large, beautiful, azure-blue crystals, which are inodorous, have a disagreeable, styptic, metallic taste, and are soluble in water but not in alcohol. It is employed as a stimulant or escharotic application to warts, ill-conditioned ulcers, fungous granulations, leech-bites, &c. From two to eight grains dissolved in a fluidounce of water forms an excellent collyrium for chronic ophthalmia. It is not used internally, and when poisonous symptoms are present from swallowing it, treat the same as in the preceding.

COTTON. *Gossypium Herbaceum*. This is an annual herb, a native of Asia, but extensively cultivated in the Southern States. The inner bark of the root is emmenagogue, parturient, and abortive. A strong decoction of the bark is used by the southern female slaves for producing abortion, which it does without any apparent injury to health. A tincture made with Sweet Spirits of Nitre, has proved efficacious in suppressed and painful menstruation. The decoction will be found to invigorate the uterine contractions during labor, when these are weak and inefficient. An alcoholic extract of the bark may be usefully combined with Senecin, Caulophyllin, or other uterine tonics, in derangements of the functions of the uterus. The bark rapidly loses its virtues by drying. A decoction of the seeds of the cotton plant have been efficacious in fever and ague. They contain a drying fixed oil, which might be profitably procured from them for many purposes.

The filamentous matter surrounding the seeds, and popularly known as *cotton*, forms an excellent application to burns, scalds, blisters, wounds, erysipelas, rheumatic pains, &c., producing its beneficial results probably, by protecting the parts from the action of the air.

CRAWLEY. *Corallorhiza Odontorhiza*. This is a perennial plant, found on barren hills and in hard clay soil in the State of New York. The root is the part used, it is small, dark-brown, resembling cloves, or a hen's claw, has a strong, nitrous smell, and a mucilaginous, slightly bitter, astringent taste. It is sedative and diaphoretic, and is used in all febrile and inflammatory diseases, especially in the typhoid stages; it is useful, likewise, in flatulency, cramps, hectic fever, and night-sweats. When it is required to influence the liver, or act on the bowels, in febrile diseases, it may be given in connection with Podophyllin or Leptandrin. In bilious or flatulent colic it may be advantageously combined with Dioscorein; and with Caulophyllin in painful menstruation, suppression of the lochial discharge, after-pains, neuralgia of the womb, &c. The powdered root should be kept in well-closed vials; its dose is from twenty to thirty grains, in warm water, and repeated every hour or two, according to circumstances.

CREOSOTE. *Creasotum*. This is a substance obtained by the distillation of tar, and sometimes from crude pyroligneous acid. When pure it is an oily, colorless fluid, having a smoky odor, and a burning, peculiar taste; that found in the shops has commonly a brownish color. It combines with naphtha, ether, or alcohol, and dissolves sulphur, phosphorus, iodine, &c. When meats are dipped into it, they are preserved from decomposition. Creosote is more generally used externally in scaly cutaneous diseases, burns, bleeding from the vessels of the skin, indolent and gangrenous ulcers, scrofulous ophthalmia, &c., in the form of mixture, solution, or ointment. Occasionally it is applied on cotton to the cavity of a decayed tooth to relieve toothache. A large dose internally, produces poisonous symptoms, which are best overcome by white of egg, ammonia, and other stimulants. Creosote added to ink or infusions, in the quantity of three or four drops to a pint, will prevent them from becoming moldy.

CROTON OIL. *Oleum Tiglii*. This oil is obtained from the seeds of an East India plant, the *Croton Tiglium*; its color varies from a pale amber to deep sherry, it is thick like Castor Oil, becoming more so by age, has a faint odor, and a persistent, hot, and acrid taste. Ether and the fixed and volatile oils dissolve it. Croton Oil is a hydragogue cathartic, in the dose of from one to six drops on sugar, or crumb of bread, and has been used in cases of obstinate constipation, dropsy, coma, apoplexy, epilepsy, mania, &c. Combined with Olive Oil, or Oil of Turpentine, it has been employed externally as a counter-irritant, causing redness, heat, and pimples, and has thus been found useful in diseases of the throat and chest, rheumatic and neuralgic affections, &c. One part to three or four of Olive Oil may be rubbed upon the affected place, or over it, and repeated three or four times a day.

CUBEBS. *Piper Cubeba*. This is a climbing perennial plant, common to the East India Islands, the berries of which are the parts used. They are mildly stimulant, expectorant, and carminative, acting especially upon mucous tissues, and have been found useful in gonorrhea, gleet, catarrh of the bladder, leucorrhea, chronic inflammation of the bronchial tubes, &c. They

should not be used during active inflammation. The dose of powdered Cubebs is from thirty to sixty grains, three times a day; of the tincture, one or two teaspoonfuls. They are frequently combined with Copaiba, and other articles, in the form of paste or pills for the cure of gonorrhea. A volatile oil is obtained by distilling Cubebs with water, having a greenish or yellowish tint, and possessing the peculiar taste and odor of the berries. It may be used in the same diseases as the berries, in the dose of ten or twelve drops, three times a day, and is best given in syrup, emulsion, or in the form of capsules.

DANDELION. *Taraxacum Dens-Leonis.* This is a perennial herb, common to most parts of the globe, the root of which, when fresh, possesses diuretic and aperient properties, which are increased by the addition of Cream of Tartar. It has been used in affections of the liver and spleen, diseases of the skin, dropsy, and in derangement of the digestive organs. The presence of acute inflammation, or an irritable condition of the stomach or bowels, contra-indicate its employment. Dose of the decoction, one or two fluidounces, three or four times a day; of the extract, from five to thirty grains. The fresh root gathered in the autumn is the best.

DIGITALIS. *Digitalis Purpurea.* This is a biennial plant, growing in the temperate parts of Europe, and is also known by the name of *Foxglove*. The leaves are the parts used; they are faintly odorous, have a nauseous and bitter taste, and impart their virtues to water, ether, alcohol, or diluted acids. In large doses, Digitalis is a narcotic poison; in medicinal doses, it is a sedative and diuretic, reducing the pulse, and increasing the urinary discharge. As it is liable to accumulate in the system, developing its poisonous symptoms suddenly, when it has been given for some time in small doses, its effect should be carefully watched. It is much used in all febrile and inflammatory diseases, palpitation of the heart, spitting of blood, whooping-cough, asthma, and in dropsy connected with diseased heart or kidneys. The dose of the leaves in powder, is from one to three grains, two or three times a day; of the tincture from ten to fifteen drops. Its poisonous effects are best overcome by the free use of warm fluids to cause vomiting, with brandy, wine, Ammonia, or other stimulants to counteract the depression; and also mustard to the ankles and wrists.

DOGWOOD. *Cornus Florida.* This is a small tree common to the United States, the bark of which is used in medicine as a tonic, astringent, and antiperiodic. It is considered by many as a good substitute for Peruvian bark in intermittent fever, and may be used in all cases where Quinia is indicated, as in periodical fevers, typhoid fevers, &c. Dose of the powdered bark, from ten to sixty grains, as often as required; of the extract, five to ten grains.

Cornine is a principle obtained by Mr. W. S. Merrell; a tincture of the bark is made, to which water is added, and then the alcohol is distilled off. The Cornine is precipitated in the water; it is of a light grayish brown color, a peculiar odor, and a slightly bitter and astringent taste. Alcohol almost wholly dissolves it, and Ammonia renders the solution complete; ether wholly dissolves it. It possesses the properties of the bark, and may be variously combined with Xanthoxilin, Salicin, Hydrastin, &c. The dose of Cornine is from one to ten grains, or more.

DWARF ELDER. *Aralia Hispidula*. This is a perennial undershrub, growing from New England to Virginia, and flowering from June to September. The bark of the root is diuretic and alterative, and an infusion is very valuable in dropsy, gravel, suppression of urine, and other urinary disorders; it may be taken in wineglassful doses, three or four times a day. A warm infusion of the leaves is sudorific. The juice, or decoction of the fresh roots, is said to be emetic and hydragogue, and has been found efficacious in dropsy.

EGG. *Ovum*. The common hen's egg consists of an external shell, a lining membrane, the white and the yelk. The white, *albumen ovi*, is used as a demulcent in cases of irritation or inflammation of the mucous membrane of the stomach and bowels, and as an antidote to several poisons, as the salts of copper, corrosive sublimate, &c. Agitated with alum, the white forms an astringent mixture, useful in some forms of chronic ophthalmia, as a poultice. The yelk, *vitellus ovi*, is used in preparing mixtures, emulsions, &c. It is nutritious and slightly laxative, and will, on account of its easy digestibility, be found useful in dyspepsia, consumption, nervous debility, &c. When the yolk is heated, it forms a granular, solid mass, which, by expression, yields a fixed oil, which has been found useful as an application to sore nipples.

ELATERIUM. *Momordica Elaterium*. This plant known as the *Wild* or *Squirting Cucumber*, is a perennial plant common to the South of Europe. The part used is the juice around the seed, and which must be collected shortly previous to the period of ripening. The juice when properly pressed, is called *Elaterium*; it is of a light green color, in flat, thin pieces, the surfaces of which are marked with the linen used in drying it, has a weak odor, and an acrid and a very bitter taste. It is lighter than water, is readily powdered, and yields its virtues to alcohol. Elaterium is a powerful hydragogue cathartic, frequently producing vomiting, griping pain, and profuse watery discharges, and in large doses occasioning inflammation of the stomach and bowels. It is used in dropsy to promote absorption of the effused fluid; as a revulsive in cerebral affections, and wherever a hydragogue or revellent effect is indicated. The dose of Elaterium is from one-eighth of a grain to one-fourth, every four or six hours. The addition of a few grains of Capsicum to each dose, will frequently prevent its nauseating effects.

Elaterin, is the active principle of the Elaterium; it is in the form of colorless, satiny prisms, which are soluble in alcohol; its dose is from one-twelfth to one-sixteenth of a grain, given in solution.

ELDER. *Sambucus Canadensis*. This is a well-known shrub, the flowers, berries, and inner bark of which are used in medicine. A warm infusion of the flowers is diaphoretic and gently stimulant; a cold infusion, diuretic, alterative, and cooling, and much used in erysipelatos diseases, hepatic derangements of children, &c.; also in rheumatism, scrofulous and syphilitic diseases. In combination with Beech Drops and Maidenhair, they form a valuable infusion in erysipelas. The expressed juice of the berries evaporated to a syrup, acts as a purge in the dose of one ounce; it also possesses diuretic and alterative properties. The inner green bark is cathartic and diuretic, and may be taken in a vinous infusion, or, the expressed juice may be used; the dose of either being one or two table-spoonfuls. Infused in wine the bark has been found very efficacious in dropsy following scarlet fever, and other febrile and eruptive diseases. Pounded with lard or cream, the bark

forms an ointment useful in burns, scalds, and some diseases of the skin. The expressed juice of the root forms an efficient diuretic and hydragogue cathartic in all dropsical diseases.

ELECAMPANE. *Inula Helenium.* This is a perennial plant, native of Europe and Japan, and cultivated in this country. The root should be gathered in autumn, in the second year of its growth. It has a pleasant odor, and a spicy, bitterish taste. Elecampane root is a stimulant and tonic, and is also said to be diuretic and expectorant. It is much used in chronic affections of the lungs and air-tubes, dyspepsia, debility of the stomach, torpor of the liver, &c. Externally, the decoction forms a good application in itch, tetter, and other skin diseases. Dose of the powdered root from one scruple to one drachm; of the infusion or decoction, one or two fluidounces.

ELECTRO-MAGNETISM. Electricity has for many years been used as a remedial agent in the treatment of various diseases; but it is only within a few years past that that modification of it, termed Electro-Magnetism, has been employed. There are various forms of electro-magnetic machines in vogue, but the one which I consider the best, is that in which the current is produced by the zinc and copper battery; this is more troublesome than the crank machine, but, according to my experience, is superior to it, on many accounts. The limits of this work will not allow me to enter into any explanation of Electro-Magnetism, the various modes of applying it, &c. I can merely refer to it as a valuable agent in the treatment of nearly every disease to which the system is subject. And, though it may, alone, produce permanent cures, I believe these to be very rare, unless, with its use, the proper internal means be also administered. An electro-magnetic current passed through a diseased organ, renders it more susceptible to the therapeutical influence of internal remedies, and thereby facilitates its progress toward recovery; which is about all that can be done by the action of this imponderable, and even this is very valuable to both physician and patient. The use of electro-magnetism alone, has apparently cured long-standing diseases, as palsy, rheumatism, &c., but in most of these cases, on suspending the use of the machine, the disease has gradually returned, and this will almost always be the case, unless the proper remedial agents be administered internally, at the same time. In nervous diseases especially, very light shocks will be found highly advantageous; while powerful ones, so much in the habit of being given by inexperienced persons, will prove decidedly injurious.

ERGOT. *Secale Cornutum.* The diseased seeds of rye, known as *Spurred* or *Smut Rye*. It is in cylindrical grains, curved like a cock's spur, from a third of an inch to an inch and a half in length, from a twelfth to a fourth of an inch thick, solid, of a dark-purplish color externally, grayish-red or violet-white internally, of a musty, unpleasant odor, and a sweetish, bitter, feebly acrid taste. In medicine, Ergot is used to promote the contractions of the uterus, when these are weak and inefficient; the free and long-continued use of it gives rise to terrible and dangerous symptoms. It should never be used in first labors; and in subsequent labors, its use is only admissible when the pains are weak, the mouth of the womb being soft and dilated, the head presenting, the woman nearly exhausted, and no obstacle to delivery existing, as a deformed or small pelvis, tumor, large head of the child, &c. Under no other circumstances, is its administration during labor, proper. It has, however, been given to facilitate abortion, when this has commenced, to

aid in expelling a mole, hydatids, &c., when the womb has once begun to act, and to check uterine hemorrhage. It should never be prescribed except by a physician. Scald-head may be cured, by applying to the scalp, twice a day, an ointment made of green rye, collected when six or ten inches high, and gently heating it in fresh cream.

ETHER. This is also known as *Sulphuric Ether*. It is a colorless, transparent fluid, having a peculiar, penetrating odor, and a cooling, pungent, aromatic taste. It is highly inflammable, and should never be brought near a candle, or other flame. It decomposes by too long keeping. Ether is a diffusible stimulant and antispasmodic, and has been successfully used in low fevers attended with twitching of the tendons, nervous headache, cramp of the stomach, fainting, hysterics, flatulent colic, palpitation of the heart, asthma, &c. Its dose is from ten to sixty drops. When combined with Oil of Turpentine, it is useful in relieving the pain and spasm caused by the passage of gall stones. When applied externally and allowed to evaporate, it acts as a refrigerant, and is thus used in nervous headache, external inflammations, &c.; when covered, so as to repress its evaporation, it acts as a rubefacient. *Letheon* is the name given to pure Ether, prepared for inhalation; but it is not so frequently used for the production of insensibility as Chloroform.

FALSE BITTERSWEET. *Celastrus Scandens*. This is a woody, twining shrub, common to the United States, having a long, creeping, bright orange-colored root, and a thick red, or yellowish-red bark, which has a sweetish, rather nauseous taste. This root-bark is alterative and diuretic, with slight narcotic powers, and has been successfully used in scrofula, secondary syphilis, chronic disease of the liver, diseases of the skin, rheumatism, leucorrhea, and obstructed menstruation. The dose of the decoction is from two to four fluidounces, three or four times a day; of the extract, from five to ten grains. Externally, an ointment of the fresh root has been used in inflamed and indurated breasts of nursing women.

FEVERFEW. *Pyrethrum Parthenium*. This is a European perennial plant, introduced into this country. The herb in warm infusion, is an excellent remedy in recent colds, flatulency, worms, irregular menstruation, hysterics, suppression of the urine, and in some febrile diseases. It may be drank freely. The cold infusion, or extract, makes a valuable tonic. A poultice of leaves is useful in severe pain, or swelling of the bowels, &c.

FIGWORT. *Scrophularia Nodosa*. This is a European perennial plant, introduced into this country. The leaves and roots are the parts used; they have a nauseous odor, and a disagreeable, bitter, or subacid taste. Figwort is alterative, diuretic, and anodyne; and is efficacious in liver diseases, scrofula, dropsy, diseases of the skin, and, as a general deobstruent to the glandular system. Dose, in infusion or syrup, from two to four fluidounces, three times a day. Externally, in fomentation or ointment, it is valuable in bruises, ringworm, piles, inflammation of the breasts, itch, &c. A decoction of the root, drank freely, is said to restore the lochial discharge, and to relieve painful menstruation.

FIREWEED. *Erechthites Hieracifolius*. This is a rank, annual weed, common to the United States. It emits a peculiar, aromatic, and fetid odor, and has a bitterish, slightly astringent, rather disagreeable taste. The whole

plant is used as a tonic, astringent, and alterative, exerting a beneficial influence, especially on mucous tissues. An alcoholic extract of the plant has proved very useful in diarrhea, summer-complaint of children, and in dysentery; in the last named disease, it promptly allays the pain, checks the discharges of bloody mucus, and hastens a cure. The Volatile Oil of Fireweed, obtained by the distillation of the fresh plant with water, has a strong, rather unpleasant odor, and a disagreeable, pungent, bitterish taste. It has been used with advantage, in the same diseases as the plant, and likewise in whooping-cough, hysteria, hiccough, colic, and spasmodic affections of the stomach and bowels. Its dose is from five to ten drops, on Sugar, or rubbed up with Gum Arabic mucilage. When rubbed with Extract of Stramonium, it forms a valuable local application for piles.

FIRING. Obtain a thick iron-wire shank, about two inches long, and inserted into a small wooden handle; on its extremity, which must be slightly curved, have a disk, or button of iron, exactly one-quarter of an inch thick, and half an inch in diameter. The whole instrument to be only six inches in length. The face of the disk for application, must be flat. Every family should be in possession of one of these instruments.

To apply it, light a small alcohol lamp, and hold the button over the flame, keeping the fore-finger of the hand holding the instrument, at the distance of about half an inch from the button. As soon as the finger feels uncomfortably hot, the instrument is ready for use, and the time required for heating it to this degree, will be about half a minute. It is to be applied as quickly as possible to the parts, the skin being tipped successively, at intervals of half an inch over the affected part, as lightly and as rapidly as possible, always taking care to bring the flat surface of the disk fairly in contact with the skin. In this way, the process of firing a whole limb, or the loins, making about one hundred applications, does not occupy a minute, and the one heating by the lamp suffices. To ascertain whether the heat be sufficient, look sideways at the spots, as you touch them, and each spot will be observed of a shining white, much whiter than the surrounding skin. In from five to thirty minutes, the skin becomes bright red, and a glow of heat is felt over the part. The iron must never be made red-hot—it is very little hotter than boiling water—should never make an eschar, and rarely raise a blister. On the next day after its application, a number of circular red marks will be seen on the skin, the cuticle not even being raised, and the surface ready, if necessary, for a fresh application. It is much superior to a blister in many cases, and the most delicate female will not object to its frequent repetition, when required. This acts as a powerful counter-irritant in paralysis, local muscular rheumatism, sciatica, lumbago, neuralgic pains, &c. Also applied along each side of the spinal column in intermittents, epilepsy, mania, and similar diseases.

FLAXSEED. *Linum Usitatissimum.* Flax is a well-known annual plant, the seeds of which, as well as the oil procured from them, are used in medicine. An infusion of Flaxseed is demulcent, and nutritive, and is much used in cough, catarrhal affections, inflammation of the urinary organs, bowels, or lungs. One ounce of the seeds, not bruised, may be infused in a pint of hot water, and may be sweetened with honey or loaf sugar, and flavored with lemon-juice; the dose is one or two pints daily. Used as an injection, the infusion has been employed with benefit in dysentery, piles, and thread worms in the rectum. Piles have been cured in a few weeks, by the use of *Linseed Oil*, in half-gill doses, repeated twice a day, avoiding,

while using it, all liquors and stimulating food. It has also been given with advantage in colic, for the removal of the long, round worm, and in dysentery. *Carron Oil*, an efficacious application to burns, is composed of Linseed Oil and Lime Water. One pint of Linseed Oil combined with half an ounce each of Oils of Origanum and Wintergreen, forms a pleasant cathartic, in doses of two or three table-spoonfuls.

FROSTWEED. *Helianthemum Canadense*. This is a perennial herb, common to dry, sandy soils, throughout the United States, and flowering from May to July. It is also known by the name of *Rock-Rose*, *Frost-Plant*, &c. It is tonic, astringent, and alterative, and may be used either in decoction, syrup, or fluid extract. It is a valuable agent in scrofulous diseases, and combined with Turkey Corn and Stillingia, has effected cures in secondary syphilis. The decoction has been administered in diarrhea; also used as a gargle in ulcerations of the mouth and throat, attending scarlet fever and other diseases, and, as a wash in scrofulous ophthalmia, and various affections of the skin. The fluid extract is the best for internal use. Its dose is one or two teaspoonfuls, three or four times a day. Externally, the leaves have been advantageously applied in the form of poultice, to scrofulous tumors and ulcers.

GALLIC ACID. *Acidum Gallicum*. This Acid is generally obtained from Galls; when pure it is colorless, in slender, satiny crystals, inodorous, and astringent—acid in taste. The Gallic Acid of the shops has a brownish tinge. It is soluble in alcohol, and partially so in water. Gallic Acid has been found very valuable in bleeding from the lungs, stomach, womb, and kidneys, in excessive menstruation, and in chronic mucous discharges from the bowels or bladder. The dose is from three to twelve grains, three or four times a day, in the form of pill, powder, or in solution.

GALLS. These are the morbid excrescences found upon the shoots and young boughs of a plant growing in the middle latitudes of Asia, the Dyer's Oak, *Quercus Infectoria*, and which are caused by the puncture of a fly or insect, made for the deposition of its eggs. The best Galls are hard, heavy, lead color externally, brownish-white internally, with a small hole in the center, the original place of deposit of the egg, and the habitation of the larva; they are inodorous, astringent, easily powdered, and yield their astringency to water. Galls may be used whenever astringents are indicated, as in chronic diarrhea and dysentery, passive hemorrhage, and also in poisoning by Tartar Emetic, or the poisonous vegetable alkaloids. Dose of the powder, from five to twenty grains; of the decoction from one to two table-spoonfuls. The decoction forms an excellent gargle in indolent ulceration of the mouth and throat, relaxed palate, the chronic stage of mercurial action on the mouth; and a useful injection in gleet, leucorrhea and prolapsus ani; its efficacy may be increased by the addition of Alum.

GAMBOGE. This is the concrete juice of trees growing in Siam and Cochin China, the characters of which are not yet positively known, though supposed to be the *Hebradendron Gambogioides*, and the *Garcinia Cambogia*. Gamboge is met with in rolls and in lumps, of a yellow orange color which becomes darker when exposed to the air, faintly odorous, an acrid taste after chewing it for a short time, and easily powdered. Its active principle is a resin, which is soluble in alcohol or ether. This gum-resin is a hydragogue cathartic, occasioning, however, in large doses, inflammation of the

stomach and bowels, and death. It is seldom employed alone, but commonly in combination with other cathartics, which renders its action much safer. When mixed with Cream of Tartar, or Squill, it is sometimes used in dropsy as a hydragogue, but it is apt to produce nausea and more or less griping. United with an alkali, it acts as a diuretic. It should never be used during pregnancy, in inflammation of the stomach or bowels, piles, diseased womb, excessive menstruation, &c. When it produces dangerous symptoms, its best antidote is some alkaline water, as pearlash, and any inflammatory symptoms must be treated upon general principles. The dose of Gamboge is one or two grains, repeated at short intervals until it operates.

GARLIC. *Allium Sativum.* This is a well-known perennial plant, the bulb of which is the part used. It is stimulant, diuretic, expectorant, and rubefacient; when taken internally it has proved useful in coughs, catarrhs, hoarseness, whooping-cough, worms, and in the nervous and spasmodic coughs of young children. The dose of Garlic, when eaten, varies from twenty grains to three drachms; of the juice mixed with sugar, from half a teaspoonful to a teaspoonful. When eaten too freely, it is apt to disorder the stomach, causing distress and flatulency, with headache, and febrile restlessness. Deafness is said to have been cured by placing in the ear, a few drops of a mixture of equal parts of Garlic juice, Glycerin, Oil of Sweet Almonds. Externally, the bruised bulbs, applied as a poultice over the bladder, have produced a flow of urine in cases where this discharge was suspended from debility of the bladder. They may also be applied, as a counter-irritant, along the spine and to the chests of infants and young children in inflammation of the lungs, and to the feet and limbs in fevers and affections of the head.

GENTIAN. *Gentiana Lutea.* This is a perennial plant common to the mountainous parts of Europe. The root is met with in pieces of various sizes, not over an inch thick, reddish-yellow externally, grayish-yellow or reddish at the center, feebly aromatic in odor, and intensely bitter to the taste. Water, alcohol, wine, or ether, extracts its virtues. Gentian is a powerful bitter tonic, very useful in all cases of debility and exhaustion, as in dyspepsia, gout, hysteria, suppressed menstruation, scrofula, intermittents, chronic diarrhea, worms, &c. It should not be given in cases of irritable stomach. The dose of the powdered root is from ten to thirty grains; of the infusion, one or two fluidounces; of the tincture, one or two fluidrachms; of the extract, from one to ten grains. Large doses are apt to distress the stomach, and cause vomiting. *Gentianin* is the name proposed for its concentrated bitter principle, which may be used as a substitute for Quinia, and in enlargement of the spleen, in doses of from five to twenty grains twice a day.

The Blue or American Gentian, *Gentiana Catesbei*, Soapwort Gentian, *Gentiana Saponaria*, Blue Fringed Gentian, *Gentiana Crinita*, and others of this country, possess similar medicinal virtues, and may be used as a substitute for it in all cases, in the same doses and preparations.

The Five-flowered Gentian, *Gentiana Quinquiflora*, sometimes called Gallweed, on account of its intense bitterness, has been found of great efficacy in headache, jaundice, liver affections, &c.; it is common in woods and pastures from Vermont to Pennsylvania, flowering in September and October. A variety of it is common throughout the Western States.

GERANIUM. *Geranium Maculatum.* This is a perennial plant common to the United States, and known by the names *Crowfoot*, *Crane'sbill*, &c. The root should be gathered in the latter part of the fall; when dried it is flattish, rough, knotty, and dark-brown externally, internally dingy white, with a reddish tinge, having a feeble odor, and an astringent, slightly bitter taste. Its virtues are extracted by water or alcohol. Geranium is a powerful astringent, and may be used in chronic dysentery, and diarrhea, and in cholera infantum in infusion with milk. And both internally and externally it may be used whenever astringents are indicated, as, in hemorrhages, indolent ulcers, ulcerated mouth and throat, chronic ophthalmia, gleet, excessive menstruation, diabetes, leucorrhea, and all profuse chronic mucous discharges. Relaxed palate may be benefited by gargling with a decoction of the root; and bleeding piles have been cured by injections of the decoction into the rectum. As it is not nauseous, it is well adapted to the most fastidious stomachs. The root, reduced to an impalpable powder and applied to leech-bites, wounds from small vessels, nose-bleeding, &c., covering the part with cotton, will at once check the flow of blood. Dose of the root in powder from five to thirty grains; of the decoction, one or two table-spoonfuls, three or four times a day.

Geraniin is the name applied to the concentrated extract of the root, prepared by distilling off the alcohol from a tincture made by adding the root to equal parts of alcohol and water; and then evaporating to dryness. It forms a black or dark brown shining powder, of a feeble odor, very astringent taste, and insoluble in cold water, alcohol, ether, chloroform, or oil of turpentine; liquor potassa dissolves it. It has an acid reaction. Geraniin possesses the virtues of the root in a powerful degree, and may be substituted for it in all cases of internal exhibition, in doses of from one to five grains or more, repeated as required. It is now in general use, being preferred in most cases to the powdered root.

GINGER. *Zingiber Officinale.* This well known article is the root of a biennial plant, growing in the East and West Indies. It is stimulant, rubefacient, errhine, and sialagogue. It is eminently suited to dyspeptic habits, flatulency, hysterics, nausea, pains and cramps in the stomach and bowels, the feeble state of the stomach and bowels accompanying atonic gout, and to obviate tenesmus. It is frequently used to disguise other medicines. Dose of ginger, from ten to thirty grains; of the infusion, one or two table-spoonfuls. A large quantity taken internally might produce serious effects. Combined with Black Willow bark, it forms an excellent poultice for indolent ulcers; and is at times used as a local remedy in relaxed palate, and paralysis of the tongue.

GINSENG. *Panax Quinquifolium.* This is a perennial plant, common to most of the middle and Southern States. The root is spindle-shaped, and when dried, is wrinkled and yellowish white externally, with a faint odor, and an agreeably bitter taste. It is a mild tonic and stimulant, useful in loss of appetite, slight nervous debility, weak stomach, worms, &c. Dose of the powder, from ten to sixty grains; of the infusion, from two to four fluidounces.

GLYCERIN. *Glycerina.* This is a colorless, or straw-colored, somewhat syrupy fluid, having a feeble odor, and a sweetish taste, and is obtained from oils and fats. It mixes readily with water, alcohol, or oils, dissolves many gums and resinous substances, and is destroyed by boiling.

Glycerin is stimulant, antiseptic, and demulcent. It acts as an emollient and soothing application, when used externally, absorbing moisture from the air, and preventing the parts to which it is applied from becoming too dry; on which account it has proved useful in a variety of skin diseases. It may be applied alone, in lotion, or added to poultices. It has also been used in cases of deafness, occasioned by a want of the waxy secretion of the ear, or when this becomes hard; a piece of wool is moistened with the Glycerin, and introduced into the ear. It also enters into many preparations for chapped hands, lips, &c., and excoriations of the skin or nipples. An ointment for this purpose is made by melting together Spermaceti an ounce, White Wax two drachms, and Oil of Sweet Almonds four fluid-ounces; then place the mixture in a wedgewood mortar, add Glycerin two fluidounces, and rub the whole together until well mixed and cold. One ounce of Gum Arabic, dissolved in two fluidounces of boiling water, to which two fluidrachms of Glycerin are subsequently added, forms a very adhesive paste for attaching labels to glass, tin, and other smooth surfaces.

GOLD. One of the salts of this metal used in medicine is the *Muriate* or *Chloride of Gold and Soda*, Sodii Auro-Terechloridum. It is a bright yellow salt, in quadrangular, prismatic, elongated crystals, permanent in the air, and soluble in water. In large doses, it is a corrosive poison; in medicinal doses it is diuretic and alterative, and is used in syphilitic, scrofulous and skin diseases, goitre, scirrhus tumors, ophthalmic affections, dropsy, &c. The dose is from one-twelfth of a grain to one-thirtieth, and may be given dissolved in water, or made into a pill with Starch and Gum Arabic. Externally, it may be applied to scrofulous and syphilitic ulcers, in solution, or in ointment, in the proportion of seven or nine grains to the ounce of water or prepared lard.

GOLDEN SEAL. *Hydrastis Canadensis*. This is a well known perennial plant, growing throughout the United States, more especially in the West. The rootstock is crooked, knotty, wrinkled, one or two inches long, giving off a number of long, yellow fibres; it is of a bright yellow color, has a faint narcotic odor when dried, and an exceedingly bitter taste. It is a powerful tonic, and exerts an especial influence upon mucous surfaces and tissues. It has proved efficacious in dyspepsia, chronic affections of the mucous coat of the stomach, typhoid and intermittent fevers, torpor of the liver, and wherever tonics are indicated. As a local application, the decoction has been advantageous in some forms of ophthalmic disease; and a decoction of four parts of Golden Seal and two of Geranium, has been efficacious in gleet, chronic gonorrhea, leucorrhea, spermatorrhea, and inflammation and ulceration of the internal coat of the bladder, being used in injection. A decoction of Golden Seal and Blue Cohosh, used as a wash or gargle, is useful in sore mouth and throat. Dose of the powdered root, from ten to thirty grains; of the decoction, one or two table-spoonfuls; of the tincture, one or two teaspoonfuls.

Hydrastin is the name given to the concentrated preparation obtained from the root, by distilling off the alcohol from a saturated tincture, adding hot water to the residuum, allowing it to stand for a few days, pouring off the liquor, and then adding muriatic acid. The mode of preparation is fully described in the author's American Eclectic Dispensatory. Hydrastin forms in yellow, translucent, delicate, acicular crystals, neutral, and insoluble in alcohol, ether, water, or oil of turpentine, though each of these fluids becomes colored yellow. Acetic acid added to water, renders Hydras-

tin more soluble in this fluid. Hydrastin is a tonic, possessing, in an eminent degree, the virtues of the root, for which, in most cases, it may be substituted. It is especially adapted as a tonic during convalescence from exhausting diseases, in dyspepsia, chronic inflammation of the stomach, jaundice, remittent and intermittent fevers, &c. The dose is from three to five grains, three or four times a day.

GROUND CENTAURY. *Polygala Nuttalli.* This is an annual plant, growing on Long Island, Martha's Vineyard, and from Rhode Island to Louisiana. The stem is eight or ten feet high; leaves linear, acutish, and scattered; flowers rose-purple; seeds black. The plant sometimes grows in bunches of fifteen or twenty stems from one root, and on the root will be observed something resembling a nearly developed flower. It grows in very poor soil, and flowers in August. This plant has the reputation of being almost infallible as a remedy in fever and ague. Two or three drachms of the plant made into a strong decoction, will act as a cathartic. It is an useful tonic and alterative, very efficacious in boils, some eruptions of the skin, and especially in erysipelas. Two drachms of the plant to a pint of whiskey, and taken three times a day, in table-spoonful doses, will be found very useful in these diseases, proving actively diuretic.

GROUND IVY, *Nepeta Glechoma.* This is a perennial herb, with a creeping stem, common to the United States and Europe, and known in some places by the name of *Gill-over-the-ground*. The leaves are the parts used; they have a disagreeable odor, and a rough, bitterish, somewhat aromatic taste. They are stimulant, tonic and pectoral, and have been recommended in diseases of the lungs and kidneys, asthma, jaundice, &c. An infusion is said to prevent and remove painter's colic, when used daily. The fresh juice, snuffed up the nose, is said to cure the most inveterate headache. Dose of the leaves, in powder, from thirty to sixty grains; of the infusion, one or two fluidounces.

GUAIAIACUM. *Guaiacum Officinale.* This is a tree growing in the West Indies, the wood and resin of which are used in medicine. The *wood* is usually met with in the form of shavings or chips, being a mixture of yellow and greenish-brown pieces. It has no odor, unless rubbed, but a bitterish, acrid taste, followed by a pricking sensation in the throat. The *resin* is in lumps of various sizes, brownish-red, with a greenish hue externally, and brownish yellow internally. It has a faint odor, a sweetish-bitter taste, succeeded by heat and pungency, and is readily powdered. It is soluble in alcohol. Both the wood and resin are stimulant and alterative. A warm decoction of the wood acts as a diaphoretic, if the body be kept warm while using it; and as a diuretic, if kept cool. These agents have been used in chronic rheumatism, diseases of the skin, scrofula, and venereal diseases. The *resin* acts as a purgative in large doses. In small doses it has been found beneficial in painful and suppressed menstruation, acute dysentery, and as an antidote to the poisonous effects of the Poison Oak. If sickness, loss of appetite, or irregularity of the bowels occur while taking the preparations of Guaiacum, their use must be discontinued. The dose of a decoction of the root is from two to four fluidounces, three or four-times a day; of the powdered resin, from five to twenty grains; of the tincture of the resin, from one to four teaspoonfuls.

GUM ARABIC. This is the concrete juice of trees growing in Egypt,

Arabia, and other tropical countries, as the *Acacia Arabica*, *Acacia Vera*, &c. The best Gum Arabic is of a pale straw color, translucent, inodorous, viscid and insipid, and readily soluble in water, dilute acids, and alkaline solutions. It is nutritive and demulcent, and is much used in irritations or inflammations of mucous surfaces, as, hoarseness, cough, sore throat, gonorrhea, catarrh of the bladder, dysentery, diarrhea, strangury and tenesmus. As a medicine, it may be taken freely in solution. Where it is necessary to pursue a soothing, non-stimulating, nutritious diet, a drachm of powdered Gum Arabic may be dissolved in a pint of water, and rendered palatable by the addition of a sufficient quantity of loaf sugar; of this a table-spoonful may be administered every hour or two. In the typhoid stages of fevers, or wherever a gentle stimulant is indicated, about two fluidrachms of a saturated solution of Camphor (in ether) may be mixed with the preceding mucilage. Hemorrhages from razor cuts, leech bites, small wounds, &c., may be checked by applying to them a powder composed of equal parts of finely powdered Gum Arabic and Alum.

The following preparation has been found of much service in very obstinate cough from colds, laryngitis, &c.:—Take of Gum Arabic four ounces, good cider Vinegar one pint, apply heat and dissolve the gum, then add half a pint of molasses, and gradually evaporate to one pint; to this add four fluidounces of Tincture of Balsam Tolu, and two fluidounces of Laudanum. The dose is one or two teaspoonfuls, three or four times a day, or whenever the cough is troublesome.

Mucilage of Gum Arabic is made by dissolving four ounces of powdered gum in a pint of boiling water. Externally, the mucilage has proved serviceable in burns and scalds, repeating its application until a complete coating is formed over the injured part.

GUM HEMLOCK. This is the concrete juice of the Hemlock Spruce, *Abies Canadensis*, a tree common to Canada, and the mountains of New England. The gum, also known by the name of *Canada Pitch*, is of a dark yellowish-brown color, easily powdered, having a faint odor and but little taste. It dissolves in alcohol, and melts at a heat of 198° F. Gum Hemlock is a mild rubefacient, and is used for the same purposes as Burgundy Pitch, which it resembles in its properties. A tincture of the gum is diuretic and stimulant. The Volatile Oil, or *Oil of Hemlock*, has been used in form of liniment as an application to the throat in croup, to parts affected with rheumatic pains, and in other affections requiring a local stimulant. The Essence of Hemlock, in doses of five or ten drops in water, repeated every ten or twenty minutes, has proved efficacious in irritation of the stomach, in checking vomiting of cholera-morbus, &c. A strong decoction of the bark of the tree, has been found useful in leucorrhœa, prolapsus of the womb, diarrhea, &c.; and as a local application in gangrene.

HÆMASTASIS. This is a term applied to the retention of venous blood in the extremities by ligature. A handkerchief or any suitable cord is to be tied around the upper part of the arms, and the thighs, and then, by means of a piece of wood, the ligature is to be turned or twisted sufficiently tight to check the circulation of the venous blood, but not the arterial, which last when checked will cease to give pulsations in the limbs thus ligatured. In a short time the arms and legs will be much distended, and an amount of blood removed from the trunk and retained in the limbs, which the most heroic practitioner would not dare to remove by the lancet. If the subject faint, promptly loosen or remove the ligatures; if he be plethoric and of

firm, vigorous constitution, he must be reduced by cathartics, diuretics, and sudorifics, and, at the time of the operation, be under the influence of gentle nauseants. Hæmastasis has been found very useful in bleedings from the womb, lungs, stomach, &c., congestions, puerperal convulsions, inflammations of the brain, lungs, bowels, and in cases where it is deemed advisable to lessen the amount of blood in the head and trunk, without debilitating or injuring the system by its entire removal.

HAIR-CAP MOSS. *Polytrichum Juniperum*. This is an evergreen plant found on poor, sandy soils, in the Northern States; it is of a darker green color than the generality of mosses. A strong infusion of this plant is a powerful diuretic; two fluidounces taken every half-hour, has removed, from dropsical patients, from twenty to forty pounds of water in the space of twenty-four hours. It possesses but little smell or taste, and never causes any nausea or disagreeable sensation in the stomach. It is very useful in fevers, inflammations, dropsies, gravel, and all urinary obstructions.

HARDLEAF GOLDENROD. *Solidago Rigida*. This is a perennial plant growing throughout the United States, and common in the western prairies. It is the styptic plant of old Dr. Bone of New Jersey, who is said to have suppressed hemorrhages from large bloodvessels, by applying the powdered leaves locally. The leaves and blossoms are the parts used; water or alcohol extracts their properties. They are tonic, astringent, and styptic, and are beneficial in all external hemorrhages, as bleeding from the nose, lungs, stomach, bowels, &c.; they may be used both externally and internally in powder or infusion. In the form of poultice, they may be applied to old ulcers. The oil is diuretic. The European Goldenrod, *Solidago Virgaurea* is said to possess similar properties.

HELONIAS. *Helonias Dioica*. This is a perennial herb common to the United States, and known also by the name of *False Unicorn root*. The root is the part used; it is tapering, fibrous, about an inch and a quarter in length, and from two to six-eighths of an inch in diameter, very hard, transversely wrinkled, the end appearing as though it had been cut or bitten off; it has a feeble, peculiar odor, and a bitter taste. Helonias is tonic, diuretic, and vermifuge; in large doses, emetic; and when fresh, sialagogue. In doses of five or ten grains of the powdered root, repeated three times a day, it has proved efficacious in dyspepsia, loss of appetite, worms, colic, atony of the organs of reproduction, &c. It is an excellent uterine tonic, gradually removing debility of the womb, and imparting strength and energy to it. Leucorrhea, and painful or suppressed menstruation have been cured by its use, and the disposition to habitual abortion, when due to want of tone in the generative organs, has been wholly overcome. Dose of the powder, from ten to forty grains; of the decoction, from two to four fluidounces; of the hydro-alcoholic extract, from two to five grains. The plant is said to kill cattle feeding on it; and its decoction to kill insects, bugs, and lice. The *Helonias Bullata* possesses similar properties.

HEMP. *Cannabis Sativa*. This is a well-known annual plant common to this country, but a native of Persia, and the Northern parts of India. The concrete resinous exudation from the Asiatic plant is called *churrus*; it is narcotic, and may be used in the place of Opium, in all cases where that drug disagrees with the patient. It alleviates pain, exhilarates the spirits, promotes the appetite, and is said to augment the sexual passion. In large

doses it causes delirium and a peculiar kind of intoxication. The dose of a good article is from half a grain to a grain; the churrus of the shops is frequently so weak, as to require from ten to thirty grains to affect the system. It has been efficiently used in cholera, neuralgia, rheumatism, tetanus, and insanity. A tincture of the resinous extract, made by dissolving three grains in a fluidrachm of proof spirit has also been advantageously used in a dose to correspond with that of the resin.

HIGH CRANBERRY. *Viburnum Opulus*. This is a shrub growing in rich soils in Canada, and the northern parts of the United States, flowering in June. The bark, also known as *Cramp-bark* is the part used. It is a powerful antispasmodic, and has been found very efficacious in cramps, and spasms of all kinds, asthma, hysterics, cramps during pregnancy, and is said to be highly beneficial to those who are subject to convulsions during pregnancy, or at the time of parturition, preventing the attacks entirely, if used daily for the last two or three months of gestation. A decoction or infusion of the bark in wine may be used in doses of a table-spoonful, two or three times a day. A mixture of High Cranberry bark two ounces, Sculcap, Skunk cabbage, each one ounce, Cloves half an ounce, Capsicum two drachms, added to two quarts of Sherry wine, and allowed to macerate for ten or twelve days, forms an excellent preparation for the relief of spasmodic attacks; the dose is one or two fluidounces, three times a day. The hydro-alcoholic extract will be found very valuable in all cases where the bark is indicated. In difficulties of the womb, it may be beneficially added to Caulophyllin, Cimicifugin, Aletridin, Senecin, Asclepidin, &c. In bilious and flatulent colic, spasmodic pains of the stomach and bowels, the addition of Dioscorein to it, will be found advantageous. Dose of the extract, from one to five grains three times a day.

HOARHOUND. *Marrubium Vulgare*. This is a well-known perennial herb, a native of Europe, but naturalized in some parts of this country, which has a peculiar, rather agreeable odor, and an aromatic, bitter taste. It is a stimulant tonic, expectorant, and diuretic, and is much employed in coughs, colds, catarrhs, and other diseases of the air-passages. The infusion, taken warm will cause perspiration, or, if the body be kept cool, will increase the urinary discharge, and has been successfully used in asthma, jaundice, and suppressed menstruation. The cold infusion will remove worms, cure mercurial salivation, and is of efficacy as a tonic in dyspepsia. Dose of the powdered herb, one drachm; of the infusion, or syrup, from two to four fluidounces.

HOPS. *Humulus Lupulus*. This is a well-known plant, the strobiles or cones of which are tonic, hypnotic, antilithic, and anthelmintic. They are principally used as a sedative, or hypnotic—promoting sleep, and relieving pain and irritability of the nervous system. A pillow stuffed with Hops in hot water, has long been a popular remedy for procuring sleep. In the form of fomentation, either alone, or combined with Lobelia, Boneset, or other bitter herbs, Hops have proved beneficial in pleurisy, inflammation of the lungs, stomach, or bowels, and in painful swellings, or tumors. An ointment of Hops and Stramonium leaves has cured salt-rheum, and also proved useful in ulcers and painful tumors. *Lupulin* is the yellow powder procured by threshing the Hops, and is always preferable to the Hop, for internal use. It is very useful in delirium tremens, wakefulness in connection with nervous irritation, anxiety, or exhaustion, in after-pains, to prevent chordee, suppress venereal desires, and allay the pain at-

tendant on gonorrhea. Its use does not disorder the stomach, nor cause constipation. The dose of *Lupulin*, is from six to ten grains in powder, or pill; of the Tincture, from a teaspoonful to a table-spoonful. The Ethereal Oil of *Lupulin*, is made by allowing the Tincture, prepared with Ether, to evaporate spontaneously. It is very useful in allaying pain, and calming the nervous system, in doses of from ten to thirty drops.

HORSEMINT. *Monarda Punctata*. This is a well-known plant, common to the United States, which possesses carminative, stimulant, sudorific, diuretic, and anti-emetic properties. The warm Infusion, or Essence, is used in flatulence, nausea, vomiting, suppressed menstruation, and to produce perspiration. If the body be kept cool, it acts as a diuretic, and is useful in suppression of the urine, and other urinary disorders. It may be drank freely. The Volatile Oil is much used to allay nausea and vomiting, and as an antispasmodic. Its dose is from two to six drops, on sugar; of the Essence, from ten to forty drops in sweetened water. Externally, the Oil is rubefacient, and has been used in low forms of fever, cholera infantum, paralysis, rheumatic and neuralgic pains, &c.

HORSERADISH. *Cochlearia Amoracia*. This is a well-known perennial, succulent plant, the fresh root of which is stimulant, diuretic, antiscorbutic and rubefacient. The infusion is emetic. Horseradish has proved serviceable in rheumatic, paralytic, scorbutic, and dropsical affections, weakness of the digestive apparatus, &c. A warm infusion of the fresh root in cider, drank in sufficient quantity to cause perspiration, and repeated every night, has cured dropsy in two or three weeks, producing a more or less copious flow of urine. Hoarseness is frequently removed by occasionally using a teaspoonful or two of a Syrup, made by grating the root in a mixture of sugar and water. Grated in vinegar, it promotes digestion, when used in moderate quantities during a meal, strengthening the stomach when enfeebled, and forms a useful spring medicine.

HOUND'S TONGUE. *Cynoglossum Officinale*. This is a biennial plant, common to Europe and this country. It has an unpleasant odor, and a bitterish, viscid taste. The fresh leaves and root are anodyne, demulcent, and astringent, and have been used in coughs, catarrh, diarrhea, dysentery, and spitting of blood. A poultice of the leaves has been found valuable in scrofulous tumors, goitre, recent bruises, inflammations, and also to remove the pain and soreness attending irritated, bruised, or chafed parts, giving complete relief, especially in excoriation of the feet from much traveling. The fresh leaves bruised, or a Tincture of them, is a good application to remove the swelling and discoloration of parts, caused by blows or bruises.

HOUSELEEK. *Sempervivum Tectorum*. This is a well-known perennial plant, the recent leaves of which, when bruised, form a cooling application to burns, stings of insects, ulcers, erysipelas, and other external inflammations. They are said to remove warts, when applied twice a day. The bruised leaves, or their juice, applied locally, have cured ringworm, shingles, and other diseases of the skin.

HYDRANGEA. *Hydrangea Arborescens*. This shrub is common to the Southern, Middle, and Western States, and is sometimes called *Seven Barks*, or *Nine Barks*. The root is the part used. It is formed of numerous radicles, of more or less considerable length, and from two or three lines to five

lines in diameter. A strong decoction or syrup of the root, has been found very valuable in gravelly complaints, causing the bladder to throw off all such gravelly formations as are not too large to pass through the urinary canal. It also affords great relief in the excruciating pain accompanying the passage of gravel through the ureters, from the kidneys to the bladder. The Concentrated Decoction or Syrup may be taken in teaspoonful doses, several times a day, not to cause dizziness, oppression of the chest, or other unpleasant symptoms.

HYDRIODIC ETHER. *Æther Hydriodicus.* This preparation also called *Iodide of Ethyle*, is a powerful anæsthetic, when inhaled, but it must be entirely free from Phosphorus. It is a most valuable remedial agent, patients being able to bear a much larger quantity of Iodine in this form, than they possibly could bear in any other manner. It has been used internally with success in scrofulous diseases, by inhalation in diseases of the lungs and heart, and as a local application to painful and irritable ulcers, and scrofulous ulcers. From fifteen to thirty grains of the Ether, poured in a vial containing a fluidrachm or two of water, may be inhaled for about ten minutes at a time, repeating the inhalation four or five times a day.

HYDROCHLORIC ACID. *Acidum Hydrochloricum.* This is also known by the name of *Muriatic Acid*. When diluted with water, this acid is tonic, refrigerant, and antiseptic. It has been used with advantage in some forms of syphilis, fevers, and to counteract phosphatic deposits in urine. Given in a strong infusion of Quassia, it has proved beneficial in malignant cases of typhus and scarlet fevers. As a local application, it may be used when diluted, as a gargle in various ulcers of the mouth and throat, and elongated palate. The concentrated acid has also been used externally, in some obstinate ulcerations and diseases of the skin. The dose of diluted Hydrochloric Acid is from five to twenty drops in a wineglassful of water. It should be sucked through a quill or tube, to prevent its injuring the teeth. One ounce of acid to three ounces of water forms the diluted acid. When the pure acid is accidentally swallowed, its best antidotes are chalk, magnesia, or soap dissolved in water, and taken freely, together with the free use of mucilaginous fluids.

HYOSCYAMUS. *Hyoscyamus Niger.* This is a biennial plant, growing in Europe and the northern parts of this country, and is known more commonly by the name of *Henbane*. The leaves of the plant in its second year, are the parts used. They have a strong, unpleasant odor, and a disagreeable, rather acrid taste, which is very much lost by drying. In large doses, Hyoscyamus is a narcotic poison. In medicinal doses, it is anodyne, hypnotic, sedative, and antispasmodic, and does not cause constipation like Opium, for which drug it is frequently substituted. It is used to calm nervous excitability, diminish pain, promote sleep, and remove spasmodic action, and may be administered in neuralgic, gouty, rheumatic, and spasmodic affections, asthma, chronic cough, irritations of the urinary organs, and all irregular nervous actions. When added to cathartics, it prevents their griping, without lessening their energy. Dose of the powdered leaves, from five to ten grains; of the Tincture, from half a fluidrachm to two fluidrachms; of the Alcoholic Extract, from one-fourth of a grain to two grains, which may be gradually increased, if necessary, to ten grains. *Hyoscyamia* is its active alkaline principle. It is in colorless, satiny, inodorous, needle-like crystals,

having a disagreeable, acrid taste, and soluble in Alcohol or Ether. It is a very active poison, and is principally used to dilate the pupil of the eye, preparatory to an operation for cataract. One drop to twenty-four of water, makes a solution, a drop of which on the eye, will dilate the pupil in a few hours.

HYSSOP. *Hyssopus Officinalis*. This is a well-known perennial plant, common to Europe and this country. The tops and leaves are the parts used. They have a pleasant odor, and a warm, slightly bitter taste. Hyssop is stimulant, aromatic, carminative, and tonic. It is principally used in warm infusion as a gargle in quinsy and other sore throats. It may be used alone, or combined with Sage and Alum in infusion, sweetened with honey. Internally, it has been recommended as an expectorant in dry asthma, cough, and other affections of the chest. The fresh leaves, bruised and applied to the contusions speedily relieve the pain, and disperse every spot or mark from the part affected.

ICE PLANT. *Monotropa Uniflora*. This is a perennial plant, found in various parts of the Union. The whole plant is snow-white, resembling frozen jelly, and is very juicy and tender, dissolving and melting away in the hands like ice. The flowers appear between June and September, and have some resemblance to a pipe—hence the plant has been called *Indian Pipe*, or *Pipe Plant*. The root is the part used. It should be collected in autumn, carefully dried and kept in well-stopped bottles. It is tonic, nervine, and antispasmodic. The powder has been used as a sedative and diaphoretic in fevers, and in all cases where Opium is indicated but cannot be used on account of idiosyncrasy, &c. Diseases of a periodical character are said to be cured by it. In convulsions of children, epilepsy, chorea, and other spasmodic affections, its use has been followed with prompt success. It may be used in the place of Opium, without any of the objectionable influences of this drug. Dose of the powdered root, from half a drachm to a drachm, two or three times a day. The juice of the plant, alone or combined with Rose Water, has been found an excellent local application to chronic inflammations of the eye, to ulcers, and as an injection in gonorrhea, and inflammation and ulceration of the bladder.

INDIAN HEMP. *Apocynum Cannabinum*. This is a perennial plant, closely resembling the *Bitterroot*, and growing in the same situations. The root is the part used; when dried, it is of an unpleasant odor, a bitterish taste, and is very easily powdered. It is emeto-cathartic, diuretic, and diaphoretic. As a diuretic or hydragogue, it has been used in dropsy, in the form of decoction, from two to four fluidounces, three or more times a day. Smaller quantities of the decoction, warm, will cause diaphoresis, and have proved beneficial in periodic fevers, and affections of the lungs. From fifteen to thirty grains of the powdered root will act as an emetic. A full dose of the root lessens the pulse, causes nausea, drowsiness, vomiting, and copious watery stools, with more or less perspiration. Used as a snuff it causes sneezing. The aqueous extract will purge in doses of from three to six grains.

INDIAN TURNIP. *Arum Triphyllum*. This is a perennial plant common to damp places in North and South America, and known also by the names of *Dragon root*, *Wake Robin*, &c. The root or cormus is the part used; it is turnip-shaped, with a dark external coat, a white potato-like

substance internally, and causes when chewed an acrid, biting sensation which continues for some time, and which may be modified or relieved by the use of milk. The fresh root is acrid, expectorant, and diaphoretic, and has been used in flatulence, asthma, hooping-cough, chronic catarrh, chronic rheumatism, bronchitis, aphthous sore mouth, colic, low stage of typhus, and various affections connected with constitutional debility. Externally, it has been used in scrofulous tumors, scald-head, and other diseases of the skin. Dose of the grated root, in syrup or mucilage, ten grains, three or four times a day. When dried the root becomes inert, and a white, starchy substance can be obtained from it, having the appearance of fine arrow-root.

IODINE. *Iodinium.* Iodine is a non-metallic body, prepared from the ashes of sea-weed; it is usually in small, grayish-black or bluish-black, shining scales, having a peculiar, irritating odor, and an acrid taste. Sometimes it is in solid masses. It is easily powdered, and is soluble in alcohol, ether, the volatile oils, and in solutions of chloride of sodium, nitrate of ammonia, or iodide of potassium. In large doses, Iodine is a corrosive poison, causing many unpleasant and alarming symptoms, as muscular weakness, fever, great thirst, restlessness, rapid emaciation, cramps, small and frequent pulse, &c. In medicinal doses it is a diuretic and alterative, and has proved astonishingly beneficial in many diseases, as bronchocele, scrofula, syphilis, glandular obstructions, ulcers, rheumatism, derangements of the female reproductive organs, and chronic diseases generally. It appears to be most efficacious in hypertrophical, strumous, or cachectic conditions. Among females, the internal use of Iodine frequently augments the monthly flow, or causes it to appear much oftener than ordinarily—these effects, whenever they become troublesome, not passing off in a short time, may be checked by a suspension of the use of the medicine. A patient under the beneficial influence of Iodine will find an increase of urine, this fluid holding Iodine in solution, his appetite will improve, and his strength be gradually restored. Dose of Iodine in substance, half a grain, two or three times a day, in pill form; of the tincture, from five to ten drops, two or three times a day. Its best form of administration is the Compound Solution of Iodine. It is combined with many other valuable agents, thereby rendering them more beneficial.

IPECACUANHA. *Cephaëlis Ipecacuanha.* This is a small perennial shrubby plant found in the moist woods of several countries in South America. The root is seldom seen in this country, except when powdered, when it is of a greyish-yellow color, with a faint, peculiar odor, and a bitterish, slightly acrid taste. In doses of twenty or thirty grains, it forms a very valuable emetic, for which it is frequently administered; in doses of five or ten grains it acts as a nauseant, and has proved serviceable in asthma, catarrh, cough, sore throat, &c. In doses of from half a grain to two or three grains, it produces perspiration with diminution of arterial action, and is useful in febrile and inflammatory diseases, diarrhea, dysentery, hemorrhages, &c. From one-quarter of a grain to a grain of the powder acts as a tonic, improving digestion, increasing the appetite, and curing some forms of dyspepsia. Combined with Opium, its diaphoretic influence is greatly augmented. With Podophyllin, it increases the activity of that resinoid, and induces perspiration. It is frequently combined with Lobelia, Bloodroot, &c., to hasten vomiting and render it more effective. Externally, Ipecacuanha rubbed with Olive Oil and applied to the skin with

friction for ten or twenty minutes at a time, will cause a pustular eruption ; it has thus been found a useful counter-irritant in rheumatic affections, infantile convulsions, and chronic inflammation of the synovial membrane of the knee ; it should be applied three or four times a day, covering the part with flannel after each application. Two drachms, each, of Ipecacuanha and Olive Oil, with half an ounce of lard, form an excellent liniment for this purpose.

IRON. *Ferrum.* The various preparations of Iron are tonic, and are useful in diseases of debility, as chlorosis, scrofula, rickets, chorea, passive bleedings, epilepsy, neuralgia, &c. They should not be used in febrile or inflammatory diseases, nor in persons subject to determinations of blood to the head, or affected with habitual constipation. The Salts of the Protoxide of Iron are commonly more active than those of the Sesquioxide. The Salts of Iron, generally render the stools more or less black. The dose of clean Iron filings is two or three grains daily, as a tonic. The following are among the several medicinal preparations of this metal :—

1. *Acetate of Iron.* *Ferri Acetas.* This is generally used in the form of solution or tincture, each of which has a deep red color, and a strong chalybeate taste. They are tonic and astringent, and are useful in all cases where Iron is indicated, in doses of from five to thirty drops, in a sufficient quantity of water. A few drops of Creosote added to a diluted solution, will be found a valuable injection in leucorrhea.

2. *Ammonio-tartrate of Iron.* *Ferri Ammonio-tartras.* This double Salt of Iron is in dark-brown, brilliant scales, or in grains somewhat like Kino, which have a pleasant taste, and are readily soluble in water. It possesses the tonic properties of Iron preparations, and may be given in pill or solution, in doses of from four to six grains, three times a day.

3. *Black Oxide of Iron.* *Ferri Oxidum Nigrum.* This is of a dark color, and does not become changed by exposure to the air and moisture. It is a valuable chalybeate in doses of from five to ten grains, two or three times a day.

4. *Citrate of Iron.* *Ferri Citras.* This is of a beautiful garnet red color, in thin scales, which are soluble in water. It is a pleasant chalybeate tonic, and may be given in pill or solution, in the dose of four to ten grains, two or three times a day.

5. *Citrate of Iron and Quinia.* *Ferri et Quiniæ Citras.* This is in the form of garnet-colored shining scales, which are readily soluble in water. It is a valuable tonic and antiperiodic in doses of five or ten grains, two or three times a day.

6. *Ferrocyanuret of Iron.* *Ferri Ferrocyanuretum.* This Salt of Iron is also known by the names of *Prussiate of Iron*, and *Prussian Blue*. It is of a beautiful dark blue color, inodorous, without taste, and not soluble in alcohol or water. It possesses tonic, sedative, and febrifuge virtues, and is much used in conjunction with Sulphate of Quinia in intermittent, congestive, bilious and typhoid fevers, also in typhoid pneumonia ; the dose is from two to four grains of each, repeated every three, four, or five hours. Prussiate of Iron has likewise been used in diarrhea, summer-complaint of children, hooping-cough, dyspepsia, epilepsy, chorea, and neuralgia of the face ; its dose is from one to five grains, three times a day.

7. *Hydrated Sesquioxide of Iron.* *Ferri Oxidum Hydratum.* This is a reddish-brown, moist mass, which is used as an antidote to poisoning by arsenic ; it should always be freshly made, and taken in table-spoonful doses every five or ten minutes, until twelve times the amount of arsenic swal-

lowed, or even more, of this preparation has been given. The effects of this antidote are more marked and certain when administered shortly after the poison has been swallowed.

8. *Iodide of Iron.* Ferri Iodidum. This salt is of a grayish black color, with an astringent, chalybeate taste, and rapidly decomposes on exposure to the air. It is commonly employed in the form of solution, which is of a pale-green color. It is tonic, alterative, diuretic, and emmenagogue; improving the appetite and the digestive powers, and has been efficaciously used in scrofula, chlorosis, secondary syphilis, amenorrhea, chronic diseases of the skin, leucorrhea, chronic rheumatism, and in all cases where there is a strumous condition of the system in connection with a poverty of the red globules of the blood, (anemia). The dose is from twenty to forty drops, three times a day; it should be well diluted with water, and to preserve the teeth from injury, the mouth should be well rinsed immediately after each time of taking it.

9. *Iron by Hydrogen.* Ferri Pulvis. This is a fine powder of iron obtained by means of hydrogen acting on the sesquioxide, at a dull red heat. It is of a grayish-iron color, and without taste; when black it is useless. It is the best form of metallic iron for internal use, and may be given in doses of from three to six grains, in pill form, three or four times a day.

10. *Lactate of Iron.* Ferri Lactas. This is in white plates or powder, having a feeble chalybeate taste. It is very useful in anemic and chlorotic conditions, commencing with doses of one or two grains, three or four times a day, and gradually increasing them to three or four. It may be used in pill or solution.

11. *Phosphate of Iron.* Ferri Phosphas. This is generally in the form of a bluish-white, or bright slate colored powder, insoluble in water. It is an efficient chalybeate, and has been used internally in cancer, periodical diseases, and to invigorate the virile powers, in doses of from one to ten grains, three times a day. A so-called *Metabasic Phosphate of Iron*, (monobasic,) has been made, by adding to monobasic phosphoric acid in a boiling state as much phosphate of iron as it would take up, and then allowing it to cool. It forms a semitransparent, slaty or greenish-colored solution which hardens on exposure to the air for a day; but it may be made into pills with liquorice or flour. It does not gripe or constipate, and has proved useful in cases of nervous debility, virile weakness from onanism, anemia brought on by any kind of excesses, and in phosphatic deposits. The dose is one or two grains, three times a day,—in some instances combined with an equal proportion of Phosphate of Quinia.

12. *Precipitated Carbonate of Iron.* Ferri Subcarbonas. This preparation forms a reddish powder, of a styptic, unpleasant taste, and insoluble in water. It is tonic, alterative and emmenagogue, and has been used in neuralgia, chorea, chlorosis, anemia, epilepsy, dropsy, scrofula, diseases of the liver, spleen, and urinary organs, &c., in the dose of from five to thirty grains, three times a day, in some water, wine, syrup, or other fluid.

13. *Protoxide of Iron.* Ferri Protoxidum. This oxide is of a dark blue color, and has a tendency to absorb oxygen from the air, and become converted into a sesquioxide. It possesses the tonic properties of iron, in doses of from two to six grains, three times a day.

14. *Sesquioxide of Iron.* Ferri Sesquioxidum. This oxide is also called the *Red oxide of Iron*; it is a reddish-brown, tasteless, insoluble powder, sometimes known as *crocus martis*, and *colcothar*. It possesses tonic and slightly styptic properties, and is used principally in strumous and neuralgic affections, in pill form with Inspissated Juice of Conium Maculatum. Its dose is from two to ten grains, three or four times a day.

15. *Sulphate of Iron*. Ferri Sulphas. This is in the form of pale-bluish-green crystals, or powder, soluble in water; it is known by the names of *copperas* and *green vitriol*. It absorbs oxygen from the air and becomes somewhat changed. It is irritant, tonic, and astringent. In large doses it causes nausea, vomiting, and griping; and its long-continued use injures the stomach. It has been used in scrofula, dyspepsia, chlorosis, suppressed menstruation, and in debility following protracted diseases, as a tonic, in doses of from one to five grains, in pill. It is also employed as an astringent in diseases with immoderate discharges, as passive hemorrhages, night-sweats, diabetes, chronic mucous catarrh, leucorrhea, gleet, &c. In an overdose it acts as a poison. Externally, a solution of one or two, to ten grains of the iron salt to a fluidounce of water, has been found useful in eruptions on the face, chronic ophthalmia, and as an injection in gleet. The *Dried Sulphate of Iron*, Ferri Sulphas Exsiccatum, is made by exposing any quantity of Sulphate of Iron to a moderate heat, in a porcelain or earthen-ware vessel, not glazed with lead, till it is converted into a dry, grayish-white mass, which must be reduced to powder. It has the same properties as the Sulphate of Iron, three grains of the dried or anhydrous salt being equivalent to five of the crystallized sulphate. A solution of it may be used externally as an astringent for indolent ulcers, and as an injection in leucorrhea, and gonorrhea of females.

The *Styptic* or *Red Powder* is made, by exposing Sulphate of Iron to a red heat, and continuing it until the mass assumes a reddish color; it is powerfully styptic, and is used internally, and in the form of ointment as an application to bleeding piles, and external hemorrhages.

16. *Tartrate of Iron and Quinia*. Ferri et Quiniæ Tartras. This is in the form of beautiful crimson-colored scales, very soluble in water. It is a valuable tonic and antiperiodic, and may be used in febrile diseases, in cases of debility, and in scrofulous and anemic affections, likewise, in suppressed menstruation. The dose is from three to five grains, three times a day, in solution or pill form. (See Solution of Iodide of Iron, Tincture of Acetate of Iron, and Tincture of Chloride of Iron, in Pharmacy.)

IRON WEED. *Vernonia Fasciculata*. This is a perennial plant, very common in the Western States, with heads of dark-purple flowers from July to September. The root is a bitter tonic, deobstruent, and alterative, and in the form of powder or decoction is beneficial in suppression of the menses, painful menstruation, leucorrhea, and excessive menstruation. The decoction or a saturated tincture has been recommended in intermittent, remittent, and bilious fevers. It is also reputed efficacious in scrofula and some diseases of the skin. Dose of the powder, from ten to thirty grains; of the decoction, one or two fluidounces; of the tincture, one or two fluidrachms. The leaves or powdered root in the form of poultice make an excellent discutient application to tumors; and a decoction of the leaves forms a good gargle for sore throat.

IRON WOOD. *Ostrya Virginica*. This is a small tree growing in various parts of the country, the bark and inner wood of which are bitter; there is another tree called Iron wood, the *Carpinus Americana*, which is not bitter, and must not be mistaken for the *Ostrya*. Iron wood is antiperiodic, tonic, and alterative. It has been beneficially employed in intermittent fevers, neuralgic affections, dyspepsia, scrofula, and all diseases where an antiperiodic tonic is indicated. Dose of the decoction, one or two fluidounces, three or four times a day.

ISINGLASS. *Ichthyocolla.* This is a gelatinous substance prepared from the swimming bladder of various fishes. There are several kinds in commerce, known as *staple isinglass*, *short staple*, *long staple*, *leaf isinglass*, *Cooper's gelatin*, &c. It is soluble in alkaline solutions, dilute acids, insoluble in alcohol, and is dissolved when boiled in water, forming a jelly on cooling. It is generally used as a nutritive diet, in the form of jelly, and exerts a soothing influence upon irritated mucous surfaces, for which purpose it is sometimes used in some urinary difficulties.

JALAP. *Ipomœa Jalapa.* This is a Mexican plant, the root of which is much used in medicine as a cathartic. It generally operates actively, producing several liquid stools with more or less griping, and occasionally nausea and vomiting. When Cream of Tartar is added to it, its hydragogue powers are augmented, which renders it useful in dropsies. It is a safe and certain purgative, and may be given in all cases where copious evacuations are desired, except in inflammatory conditions of the stomach and bowels. The dose of the powdered root is from fifteen to thirty grains; of the tincture, from one to four fluidrachms; of the resin, from four to eight grains in syrup or mucilage.

JUNIPER. *Juniperus Communis.* This is an evergreen shrub, native of Europe, and naturalized in some parts of this country. The fruit or berries are the parts used; they are about the size of a pea, globular, wrinkled, of a dark purple color, and contain, each, three seeds; their odor is rather pleasant, and their taste sweetish, and like Turpentine. They are gently stimulant and diuretic, and have been used in scurvy, diseases of the skin, catarrh of the bladder, and atonic conditions of the uterus and alimentary canal. They are principally used as an addition to more powerful diuretics. The *Oil of Juniper*, obtained from the berries, is frequently employed to arrest chronic mucous discharges from the urethra. It has also been used in dropsy; five minims of the Oil, with one fluidrachm of Sweet Spirits of Nitre, given three times a day in any common vehicle, produces a large discharge of urine in dropsy when other means fail. The flavor of Holland Gin is owing to the presence of this Oil. Dose of the berries, from one to two drachms; of the Oil, from five to fifteen drops.

KINO. This is the inspissated juice of an East Indian tree, the *Pterocarpus Marsupium*. It is generally met with in small blackish, or dark-reddish, shining angular grains, of various sizes, easily powdered, inodorous, and of a very astringent taste. It is likewise obtained from trees growing in Botany Bay, Africa, South America, &c. Kino is a pure astringent, and is recommended in excessive menstruation, chronic diarrhea and dysentery, and in all instances where an internal astringent is indicated. It has also proved beneficial as a local application in leucorrhea, sore-throat, relaxation of the palate, &c. An infusion of it thrown into the nostril has suppressed bleeding from the nasal mucous membrane; and the powder or lint has checked bleeding from a wound in the palate, which has resisted various means. Dose of the powder, from ten to thirty grains; of the tincture, from half a fluidrachm to two fluidrachms.

LARGE FLOWERING SPURGE. *Euphorbia Corollata.* This is a tall perennial plant, growing in Canada and the United States, yielding a milky juice when broken, which, when applied to the skin, causes a pustular eruption,—especially the juice of the fresh root. The bark of the root is the part

used; it is emetic, diaphoretic, and expectorant. Vomiting may be produced by about a scruple of the powdered bark of the root; in doses of from two to four grains, three or four times a day, it is a good expectorant, and may be given in some saccharine vehicle; catharsis will be produced by from six to fifteen grains. It is used in dropsy of the chest, and of the abdomen, as a hydragogue, the dose being fifteen or thirty grains, repeated two or three times a week.

LEAD. *Plumbum.* Several preparations of lead are used in medicine, principally, however, as external agents. When taken internally, and especially if continued for a long time, they are apt to produce lead colic, dyspepsia, constipation, lead palsy, and symptoms of apoplexy. The following are among the lead agents used medicinally:—

1. *Acetate of Lead.* *Plumbi Acetas.* Also known by the name of *Sugar of Lead.* It is in white prismatic crystals, having a vinegar odor, a sweetish, astringent taste, and soluble in water or alcohol. A solution made by dissolving one drachm of the salt in six or eight fluidounces of distilled water, and a teaspoonful of distilled vinegar, is used as a local application in erysipelas, superficial inflammations, and some diseases of the skin. A grain or two dissolved in a fluidounce of water, is also employed as a wash in some inflammations of the eye. It is sometimes given internally to check bleeding from the lungs; two or three grains being combined with half a grain of Opium and one grain of Capsicum for a dose, and repeated every three or four hours.

2. *Red Oxide of Lead.* *Plumbi Oxidum Rubrum.* Also called *Red-Lead, Minium, &c.* This is a heavy, bright scarlet-colored, and tasteless powder, insoluble in water or alcohol and is used in the formation of plasters.

LEMON. *Citrus Limonum.* An evergreen tropical tree, the juice of the fruit of which has a strong but grateful acid taste, and is much used in the form of *lemonade* as an agreeable drink in febrile and inflammatory diseases. It is tonic, refrigerant, and antiscorbutic. Ships about entering upon long voyages, should always be plentifully supplied with Citric Acid and Oil of Lemon, or Lemon Syrup. Sufficient of the Acid may be dissolved in water, to impart the degree of acidity belonging to Lemon juice, flavoring it with the Oil of Lemon, and of this solution, or of the juice itself, one or two fluidounces per day, will prevent an attack of scurvy, and six or eight fluidounces daily, will cure it when present.

Externally, Lemon juice has been used successfully as an application in troublesome itching of the scrotum. The *Oil of Lemon* is obtained from the fresh rind of the Lemon, and is principally used in perfumery, and to render medicines, &c., more agreeable to the taste. Citric Acid is obtained from the juice of Lemon, as well as from that of limes, *citrus acida*.

LEPTANDRA. *Leptandra Virginica.* This is a perennial plant common in limestone countries of the United States, the root of which should be gathered in the second year of the plant's growth, and during autumn. The root is the part used. It is of various lengths, from three to six lines in thickness, having a blackish bark enclosing a brownish woody interior, and giving off many delicate, dark-colored fibres. Its medicinal properties are lost by age; the more recent the root, the greater is its activity. The plant is commonly known by the name of *Black Root*, or *Culver's Physic*. The fresh root produces emesis, bloody stools, dizziness, vertigo, and, in pregnant

females, abortion, unless used with care. The root, when dried, is laxative, cholagogue, and tonic. It is useful in affections of the liver, bilious and typhoid fevers, diarrhea, and dysentery. In bilious and typhoid fevers it causes black, tarry discharges, without impairing the functions of the bowels, or weakening the system. In small doses, it is useful in dyspepsia. It effects its influence upon the liver, exciting this organ to renewed energy, without causing active purgation. Dose of the powdered root, as a cathartic, from twenty to sixty grains; of the infusion, in typhoid conditions, a table-spoonful every hour until it operates, and to be repeated daily; of the hydro-alcoholic extract, from one to five grains, in pills.

Leptandrin, is the name given to the concentrated agent prepared from the root, by adding water to a strong tincture, and distilling off the alcohol. (See Am. Ec. Dispensatory.) It is a jet-black, or greyish-brown shining substance, having a faint peach kernel odor and taste, with some bitterness. It is partially soluble in alcohol, but becomes wholly so upon the addition of a small portion of Aqua Ammonia; it is soluble in diluted Aqua Ammonia, or Liquor Potassa, from which it is thrown down by acids. *Leptandrin* is a powerful cholagogue, with but little or no action upon the bowels. It may be safely and advantageously given in diarrhea, cholera-infantum, typhoid fever, some forms of dyspepsia, and all diseases connected with derangements of the biliary organs. Combined with Podophyllin it is a prompt and effectual remedy in epidemic dysentery, when unconnected with irritability of the nervous system, often effecting permanent cures in from twelve to eighteen hours. The dose of *Leptandrin* is from one to six grains every three or four hours, according to the effect desired.

LETTUCE. *Lactuca Sativa*. This plant, as well as the *Lactuca Virosa*, contains a lactescent juice, which flows from the stem when this is cut or wounded; when dried, the juice forms Lettuce Opium, or *Lactucarium*, which is sometimes employed as a substitute for Opium, in cases where this drug disagrees, in doses of from five to twenty grains; it is preferred, in many instances, to Opium, on account of its freedom from constipation, cerebral excitement, and other unpleasant after effects. The Tincture of *Lactucarium* may be given in doses of from thirty to sixty drops.

LIFE ROOT. *Senecio Aureus*. This is a perennial herb, growing in damp places in the Northern and Western States, and frequently known by the name of *Ragwort*. It, together with another species found on rocky shores, the *Senecio Gracilis*, Unkum, or Female Regulator, is used principally on account of its efficiency in uterine difficulties. The *S. Gracilis* is generally preferred. An infusion or decoction of it is very efficacious in promoting the menstrual flow, when suppressed; in relieving painful menstruation; and, combined with cinnamon and red raspberry leaves, in checking excessive menstruation, for which it may be given at the time of the discharge, and during the intervals. Dose of the decoction or infusion, from two to four fluidounces, three or four times a day.

Senecin is the name of the oleo-resinous concentrated preparation obtained from the herb. In quantity it is black, but dark green in thin layers; has the odor of the herb, and a bitter, rather disagreeable taste. The *Senecin* recently prepared by Mr. Merrill is in the form of powder. Either of these preparations possesses the medicinal properties of the herb in a concentrated degree, and may be employed in all the derangements of the female reproductive organs in which the plant is used. Its dose is from three to five grains, three times a day.

LIME. *Calx.* This is sometimes used in medicine in the form of an escharotic mixture, known as the *Vienna powder* or *paste*, and which is made by mixing Caustic Potash one and a half parts, with two parts of quicklime. Lime may be used to produce perspiration, where it is not desirable to disturb the patient, thus:—Take a piece of Lime about the size of an orange, wrap a moistened rag around it, and cover this with several thicknesses of dry muslin or cloth. Place one thus prepared on each side of the patient, and by both thighs; they will soon induce copious perspiration. *Milk of Lime* is a thick liquid, made by adding Lime to an excess of water. When water is gradually added to Lime, it falls to powder, and is termed *Hydrate of Lime*, or *slaked Lime*, which is less caustic than unslaked Lime. The following are among the Lime preparations used in medicine:—

1. *Chloride of Lime.* *Calx Chlorinata.* This is a grayish-white, dry, or slightly moist substance, having a chlorine odor, and a strong, astringent, and bitter taste. It is usually applied to gangrenous ulcers, chilblains, burns, and diseases of the skin, &c., to keep the parts dry, and remove any disagreeable fetor. Its solution is sometimes combined with poultices, for similar purposes, and may be used as a wash or gargle in all cases of gangrene, or fetid emanations.

2. *Lime Water.* *Aqua Calcis.* This is made by stirring about four ounces of unslaked Lime in one gallon of distilled water; then setting it aside for a few hours, and pouring off the clear liquor as it may be wanted. It is antacid, antilithic, tonic and astringent. It is recommended in all diseases accompanied with acidity of the stomach, in diabetes, chronic diarrhea and dysentery, and to allay vomiting. If its use be too long continued, it weakens the stomach. The dose is from four fluidrachms to two fluidounces, and it is best taken in an equal quantity of milk. Externally, it has been used as a wash in scald-head, foul ulcers, and mixed with Linseed Oil as an application for burns and scalds.

Prepared Chalk. *Creta Preparata.* This is a Carbonate of Lime, which is used in acidity of the stomach, heartburn and diarrhea, either alone, or combined with aromatics and opium. Its dose is from ten to sixty grains. Externally, it is used to absorb the ichorous discharge from burns and ulcers, and to prevent excoriation from pressure or friction.

LIQUORICE. *Glycyrrhiza Glabra.* This is a perennial plant, common to the south of Europe, and Asia. The root is the part used. It is a demulcent and expectorant, and is very useful in catarrh, cough, and irritations of mucous surfaces. The decoction may be used freely. The well-known black Extract of Liquorice may be used for the same purpose; this, when dissolved in water, strained, evaporated to the proper consistence, and rolled into long pipe-like cylinders, is termed *Refined Liquorice*.

LOBELIA. *Lobelia Inflata.* This is a well-known weed, common to the United States, the leaves and seeds of which are used in medicine. They possess emetic, nauseant, expectorant, relaxant, sedative, and anti-spasmodic properties. Ten or twenty grains of the leaves or seeds will occasion vomiting; it is commonly used in combination with other emetics, in all diseases requiring the use of such agents. In small nauseating doses of five or ten grains, it excites diaphoresis, promotes expectoration, lessens cough, and overcomes spasmodic action, and hence is useful in croup, whooping-cough, catarrh, inflammation of the lungs, asthma, cramp, hys-

teria, convulsions, &c. It may likewise be given to produce relaxation in lockjaw, in strangulated hernia, in tedious labors from rigid os uteri, and in fractures or dislocations to relax the muscles. Externally, the infusion has been found useful in some diseases of the eye. The stings or bites of insects, erysipelatous affections, spasm of the muscles of the limbs, and severe pains, may be readily relieved by the application of a poultice of Lobelia and Elm bark, mixed with weak ley, or a weak alkaline solution; this will likewise relieve pain, and relax the muscles, in case of fractures, dislocations, &c., when such effect is desirable. The tincture is an efficacious local application to sprains, bruises, rheumatic pains, erysipelatous inflammations, some diseases of the skin, as well as a remedy for the poison from poison Ivy or poison Dogwood. The *Oil of Lobelia* is occasionally used internally in very small doses; in doses to occasion vomiting, it is apt to cause inflammation of the stomach. Its more common employment is as an external application, either alone, or combined with other oils to form a liniment, to produce muscular relaxation, relieve pain, and remove nervous irritability.

LOGWOOD. *Hæmatoxylon Campechianum*. This is a tree growing in tropical America, the wood of which is the part used. It is a non-irritating tonic and astringent, and is useful in diarrhea, dysentery, and the relaxed condition of the bowels succeeding summer-complaint of children. In constitutions broken down by disease, dissipation, or the use of mercury, in addition to the other remedies, the administration of Logwood, in decoction, will be found of much service. The urine, as well as the stools, become colored red, when the preparations of logwood are taken internally. As Chalk and Limewater are not compatible with logwood, they should never be taken together.

MAGNESIA. *Magnesia Usta*. Calcined Magnesia is a white inodorous powder, of an earthy taste. It is antacid, antilithic, and laxative. It is useful in dyspepsia, with acid stomach, constipation, sick headache, &c., and is sometimes combined with Rhubarb as a laxative and antacid. As an antilithic, it corrects acidity of the stomach, and where Urate of Ammonia or free Uric Acid abounds, it forms the more soluble Urate of Magnesia. When no acidity is present, it is very liable to remain in the bowels, producing no purgative effect, on which account it is always useful to administer it in combination with lemonade or Lemon juice. The dose, as a laxative, is from half a drachm to a drachm; as an antacid or antilithic, from ten to thirty grains, once or twice daily. (See Sulphate of Magnesia.)

MAIDENHAIR. *Adiantum Pedatum*. This is a perennial fern, found on rich, moist soil throughout the United States. The whole plant is used; it has a faintly aromatic bitterish taste. Maidenhair is tonic, refrigerant, expectorant, and sub-astringent. The decoction forms a cooling drink in erysipelas, febrile and inflammatory diseases, and is also beneficial in coughs, chronic catarrh, influenza, asthma, &c. It is said to be beneficial in pleurisy and jaundice. The decoction may be used freely, as well as the syrup.

MANDRAKE. *Podophyllum Peltatum*. This is a perennial herb, growing in almost all parts of the United States, and known in some sections by the name of *May Apple*. The root is the part used, and it should be collected soon after the ripening of the fruit. It is cathartic, emetic,

alterative, anthelmintic, hydragogue and sialagogue. As a cathartic, it is equal to Jalap, and, like this drug, produces watery stools, when combined with Cream of Tartar, on which account it has been used in dropsical affections. In chronic affections of the liver, it is one of the most valuable remedies we have, arousing the organ to healthy action, increasing the flow of bile, and keeping up these actions for a great length of time. In alterative doses, it is valuable in erysipelas, scrofula, rheumatism, and many other forms of chronic disease. It has been likewise found very beneficial in constipation, painful menstruation, suppressed menstruation, incontinence of urine, and some affections of the bladder. Dose of the powdered root, as a cathartic, from ten to thirty grains; of the tincture, from ten to sixty drops; as a sialagogue and alterative, from three to ten grains of the powder, or from five to twenty drops of the tincture.

Podophyllin is the name given to the impure resin obtained from the root, by adding water to a saturated tincture, and distilling off the alcohol. It varies in color according to its mode of preparation, being dark-brown, light brownish yellow, or greenish olive. It is nearly soluble in alcohol. It possesses the virtues of the root in a superior degree, and is generally used instead of the root. It should be given in very fine powder, or triturated with loaf sugar, Sugar of Milk, &c.; its tendency to cause nausea and griping pains, may be overcome by combining it with Castile Soap, Alkalies, Ginger, or Caulophyllin. The dose, as a cathartic, varies from one-fourth of a grain to two or even four grains; as an alterative, aperient, or sialagogue, from one-fourth of a grain to one-half of a grain, every three or four hours, according to its influence.

MARSH ROSEMARY. *Statice Caroliniana*. This is a perennial plant found along the coast in marshy situations from Maine to Florida. The root is the part used; it is of a reddish, or purplish brown color, inodorous, bitter and astringent. An infusion or decoction of it is much used in diarrhea, dysentery, and other diseases requiring the use of tonics and astringents. The decoction is likewise useful as a gargle in affections of the throat, scarlet fever, ulcerated sore mouth, and as an injection in gleet, leucorrhea, falling of the womb, and also of the rectum. Externally, the powdered root may be applied to old ulcers. Dose of the decoction, one or two table-spoonfuls every hour or two.

MARSHMALLOW. *Althæa Officinalis*. This perennial herb grows in salt marshes and wet situations in many parts of Europe, and has been cultivated in this country. The root is the part used, it is in round pieces of various lengths, white, downy, having a feeble odor, and a sweetish, mucilaginous taste. Marshmallow root is demulcent and diuretic. The infusion, either in hot or cold water is valuable in all irritations of the mucous membranes, as hoarseness, catarrh, inflammation of the lungs, stomach, or intestines, catarrh of the bladder, irritation of the kidneys, acute dysentery, and diarrhea; also in retention of the urine, hemorrhage from the kidneys, inflammation of the bladder, some forms of gravel, and in nearly every affection of the kidneys and bladder. It may be drunk freely. Externally, a poultice may be formed of the root, to discuss painful, inflammatory tumors, of all kinds, and to prevent or check mortification.

MASTERWORT. *Heraclum Lanatum*. This is a perennial plant found growing from Canada to Pennsylvania, and is sometimes known by the name of *Cow-Parsnep*. The root is the part used, it somewhat resembles

that of common parsley. It is stimulant, antispasmodic, and carminative, and is useful in flatulency and dyspepsia, in decoction. Recommended also in colic, asthma, painful menstruation, palsy, intermittents, &c., in doses of one drachm of the powdered root. In epilepsy, two or three drachms daily, with a strong infusion of the tops and leaves at night, has proved successful.

MOTHERWORT. *Leonurus Cardiaca*. This is a well-known perennial plant, introduced into this country, and possessing nervine, emmenagogue, antispasmodic, and laxative properties. In warm infusion, the tops and leaves are beneficial in suppressed menstruation from colds, suppressed lochial discharge, and in hysteria. An extract of the plant is valuable in nervous complaints, pains peculiar to females, in irritable habits, typhoid stages with morbid nervous irritation, neuralgic pains in the stomach and head, and all diseases attended with restlessness, wakefulness, and disturbed irritation. Combined with Blue Cohosh and Skunk Cabbage it forms a superior nervine, antispasmodic, and emmenagogue. Externally, it may be used as a fomentation to the bowels, in suppressed or painful menstruation. Dose of the decoction from two to four fluidounces every one, two, or three hours; of the extract from three to six grains. An infusion of the root is diuretic.

MULLEIN. *Verbascum Thapsus*. This is a well-known biennial plant common to this country; the leaves and flowers are the parts used. They are demulcent, diuretic, and antispasmodic. The infusion is useful in coughs, catarrh, diarrhea, dysentery, and piles, and to allay the acidity of urine in many diseases. It may be drank freely. In bowel complaints, the leaves and flowers may be boiled in milk, and sweetened. A fomentation of the leaves in vinegar and water, forms an excellent application to the throat in quinsy, malignant sore throat, mumps, &c., also to ulcers, tumors, and inflamed piles. The seeds are narcotic, and have been used in asthma, infantile convulsions, and to poison fish.

MUSTARD. There are two mustard plants, one the White Mustard, *Sinapis Alba*, and the other the Black Mustard, *Sinapis Nigra*; they are annual plants common to this country, but natives of Europe. The seeds are the parts used. Internally, taken in small quantities, as a condiment, they are a safe stimulant of the digestive organs; in large doses they are emetic; and in excessive doses they are poisonous, producing inflammation of the stomach and bowels. They are commonly used in powder; though the white mustard seeds, taken whole, were formerly used as a tonic and laxative in dyspepsia. When applied to the skin, mustard excites redness and a stinging or burning sensation, and if too long applied, it will occasion inflammation, ulceration, and even sloughing. It is frequently applied as a rubefacient in all cases where such action is desirable; the burning pain caused by it may be removed by sponging the part with cold water, milk, or dropping ether upon it. It should never be allowed to remain long enough to produce vesication. The volatile oil of mustard is a powerful rubefacient, and may be used as a substitute for a mustard poultice in the following mixture:—Take of Olive Oil ten parts, Oil of Mustard one part; mix, and rub on the part.

MYRRH. This is the gummy resinous exudation of a tree (the *Balsamodendron Myrrha*) growing in Arabia, Abyssinia, &c. It is in irregular pieces, of a reddish-brown color, easily powdered, of a peculiar agreeable

odor, an aromatic bitter taste, and is soluble in alcohol. Myrrh is stimulant, tonic, antiseptic, expectorant, and emmenagogue. It is useful in debilitated states of the system, chronic catarrh, humoral asthma, and other affections of the air-tubes in which mucous secretion though abundant, is not easily expectorated; also in suppressed menstruation, chronic dysentery, &c. As a local application it is useful in sponginess of the gums, aphthous sore mouth, and indolent and gangrenous ulcers. Dose of the powder, from ten to thirty grains; of the tincture, one or two fluidrachms.

NITRATE OF SILVER. *Argenti Nitras.* This salt is commonly termed *Lunar Caustic*. It is met with in small rods, or in crystals, and has a persistent, bitter, metallic taste, is soluble in water, and in four times its weight of alcohol, stains the skin of a dark color, and corrodes the soft animal textures. According to Dr. W. B. Herapath, if a few drops of Tincture of Iodide be placed in contact with a stain caused by Nitrate of Silver, this salt will be converted into an Iodide of Silver, which is soluble in a solution of half a drachm of the Hyposulphite of Soda to a fluidounce of water, and after the application of which, the stains may be readily removed by washing with warm water. Nitrate of Silver is sometimes employed internally in ulceration of the intestines during typhoid fever, diarrhea, &c., in doses of the fourth of a grain made into a pill with crumb of bread, and repeated every three or four hours. It is more commonly used externally, as an escharotic, either in the solid form, or in solution of various strengths. It has thus been beneficially employed in warts, and other excrescences, ulceration of the mouth, ulcerations of the neck of the womb, chronic laryngitis, stricture of the urethra, some diseases of the eye, &c., &c. Its solution varies, according to the condition of the parts to be acted upon, and the character of the affection,—from five to eighty grains to the fluidounce of distilled water. Common salt is the best antidote to the poisonous effects of large doses of Nitrate of Silver, as well as to relieve any excessive pain caused by its application.

NITRIC ACID. *Acidum Nitricum.* This is a transparent, colorless, or straw-colored fluid, of a peculiar irritating odor, and a strong acid, corrosive taste. The acid of commerce is known as *Aqua Fortis*. It stains the skin yellow, and corrodes and dissolves all soft animal textures. When left exposed to the air, it absorbs moisture, and becomes weakened. When largely diluted with water, it forms a good drink in febrile diseases, especially where there is a disposition to prostration or putrescency; and has also proved serviceable in affections of the liver, and syphilitic diseases. The dose is five or ten drops in a large quantity of water, to be repeated three or four times a day. Twelve or twenty drops to a pint of water, forms a good application to indolent or phagedenic ulcers, and various diseases of the skin, warts, and poisoned wounds. The strong acid has been used to destroy pile tumors, and to immediately destroy the venereal virus in a chancre during its pustular form. When swallowed internally not diluted, it almost always proves fatal; its best antidotes are, the free use of Magnesia, chalk, or soap-water, and mucilaginous drinks.

NITRO-HYDROCHLORIC ACID. *Acidum Nitrohydrochloricum.* Also called *Nitro-Muriatic Acid*, and *Aqua Regia*. This is made by mixing together equal parts of Nitric and Hydrochloric Acids; though when used for dissolving gold, &c., one part of Nitric is mixed with two parts of Hydrochloric Acid. It possesses properties similar to those of the acids entering

into its formation; its dose is from three to five drops, sufficiently diluted with water. One part of this acid to six parts of water, and used as a wash over the bowels, loins, and thighs, is said to cure obstinate constipation.

NUTMEG. *Myristica Moschata*. The tree which furnishes nutmeg is a native of the Molucca Isles, and is cultivated in various tropical countries. The best nutmegs are small, firm, and heavy. They possess stimulant and carminative properties, and are used to remove flatulency, as well as to render other drugs more palatable. It is much used to flavor some articles of diet or drink, being grated over them. It is sometimes mixed with lard as an application to piles; and when charred has cured intermittent fever. The dose internally is from five to twenty grains. Large doses will produce stupor and delirium, *Mace*, is the arillus or exterior covering of the nutmeg, it possesses similar properties in the same doses.

NUX VOMICA. *Strychnos Nux Vomica*. This tree is a native of the East Indies, the seeds of which are used in medicine. They are circular, compressed, nearly an inch in diameter, about the sixth of an inch thick, thickly covered with short, brownish, silky hairs, exceedingly tough, almost horny, very difficult to powder, and of an intensely bitter taste. Alcohol takes up their virtues. Nux Vomica is an energetic poison, causing violent convulsions, asphyxia, and death, when given in too large doses. Not unfrequently small doses will cause a burning sensation in the stomach, shocks or twitchings of the muscles of the limbs, dizziness, a sense of tightness or stricture across the head, a pricking or tingling upon the surface, and a confused condition of the mind. It is more commonly used in cases of paralysis, and nervous debility, and has been found of service in dyspepsia, obstinate constipation, amaurosis, paralysis, spermatorrhea, impotence, suppressed menstruation, chorea, neuralgia, painful menstruation, rheumatism, intermittent fever, and in some forms of mania. The dose of the powder is five grains three or four times a day; of the alcoholic extract, which is the best form for internal use, from one-twelfth to one-thirtieth of a grain, as a tonic, and from a quarter of a grain to half a grain in paralysis; of the saturated tincture, from five to thirty drops, but this is a disagreeable preparation for internal use.

Strychnia, is the active alkaloid principle of Nux Vomica; in commerce it is met with in the form of a white, inodorous, but intensely bitter powder. It is a most powerful poison, frequently causing death in the dose of half a grain; too much caution cannot be employed in its medicinal employment, as some persons are powerfully affected by the minutest doses. It is used in the same diseases as the Nux Vomica, in doses varying from one-twentieth to one-sixtieth of a grain, in form of pill. The addition of a few drops of Acetic, Nitric, or Muriatic Acid, will render it soluble in water or alcohol. Camphor and Sweet Oil have been advised as its antidotes; but no certain antidote is yet known. None of the preparations of Nux Vomica must be used in local irritation of the brain or spinal chord, when there is a determination of blood to the head, nor in corpulent or apoplectic persons. In the administration of Nux Vomica or Strychnia, great caution must be observed, and the patient be carefully watched during their use, ceasing to administer them, when their effects become too manifest.

OIL OF CAJEPUT. *Oleum Cajuputi*. This is a transparent, grass-green oil, obtained from the leaves of an East Indian tree, the *Melaleuca*

Cajuputi; it has a strong, penetrating, aromatic odor, and a warm, pungent taste. It is a powerful diffusive stimulant, diaphoretic, and antispasmodic, and may be advantageously employed in chronic rheumatism, hysterics, colic, flatulence, spasms or cramps of the stomach and bowels, cholera morbus, and where a powerful stimulant is required. In combination with other oils in the form of liniment, it is used externally in all painful affections, as rheumatism, neuralgia, &c. It is sometimes applied on cotton to the cavity of a carious tooth, for toothache. The dose is from one to five drops on sugar, or in emulsion.

OIL OF TURPENTINE. *Oleum Terebinthinæ*. Sometimes called *Spirit of Turpentine*. This is obtained by distilling the turpentine from various trees, with or without water. It is an irritant, stimulant, cathartic, diuretic, anthelmintic, and, in chronic mucous discharges, astringent. In large doses it causes strangury, and many other unpleasant symptoms. In medicinal doses, it has been used to increase the urine, and to diminish excessive mucous discharges, as in chronic catarrh, chronic diarrhea, chronic dysentery, gleet, chronic inflammation of the bladder, &c. It is also used in the typhoid stage of fevers, in tympanitis, and in ulceration of the bowels. The dose is from five to thirty drops, repeated every two or three hours. In doses of from twenty to sixty drops, repeated every three or four hours, it has proved efficacious in bleeding from the nose, lungs, stomach, womb, &c. Combined with Castor Oil, it forms an excellent vermifuge, and has removed tape worm. It is best administered on sugar, in some aromatic syrup, cinnamon-water, &c. Externally it enters into several lotions and liniments, as a rubefacient and counter-irritant in rheumatic and paralytic affections, indolent tumors, chilblains, indolent and erysipelatous ulcers, caries, sloughing, and in burns and scalds combined with Linseed Oil. It has also been used as an injection in tympanitis, suppressed menstruation, obstinate constipation, and for the removal of thread worms.

OLIVE OIL. *Oleum Olivæ*. This is expressed from the fruit of the Olive tree, the *Olea Europæa*. It is a colorless or pale greenish-yellow fluid, unctuous, nearly inodorous, and with a sweetish, mucilaginous taste. By long keeping it becomes rancid. It is nutrient, and emollient; and laxative in doses of one or two fluidounces. It has been used in coughs, catarrh, irritation of the intestinal mucous membrane, and as an antidote in poisoning by alkalies. It is said to be serviceable in scarlet fever, plague, and some other febrile eruptive diseases, when applied over the whole surface of the body. It is generally employed in the composition of cerates, liniments, plasters, &c. When prepared for table use, it is called Sweet or Salad Oil, but is improper for dyspeptics.

ONION. *Allium Cepa*. This well-known article possesses virtues somewhat similar to those of Garlic. The juice, with sugar, to form a syrup, is a popular remedy for cough, croup, and colds of infants. Boils, and all suppurating tumors, foul and indolent ulcers, &c., are frequently benefited by a poultice of roasted Onions. When boiled, the Onion forms an excellent article of diet; eaten raw, it is very apt to occasion flatulence, distress about the stomach, and other unpleasant symptoms. It may be used externally, in the same manner as Garlic, though it is much milder in its action.

OPIUM. This is the concrete juice of the unripe capsules or seed-vessels of the Poppy, *Papaver Somniferum*. In large doses it is a stimulant narcotic, causing at first an increased action of all the powers of the system, followed by sleep, and subsequent giddiness, nausea, headache, tremors, and general nervous derangement, with constipation, and often, retention of urine. These unpleasant symptoms may be relieved by strong coffee, lemon-juice, or a cathartic. In still larger doses, there will be a small, soft, and slow pulse, contraction of the pupils, coldness of the limbs, more or less insensibility, and if not soon relieved, death. The remedies, when thus taken, are emetics of Mustard and Lobelia, with strong coffee, stomach pump, external counter-irritation, cold water to head and spine, forced exercise, and electro-magnetism. To be followed, after consciousness is restored, by stimulants and a cathartic. Poisoning by any of its preparations requires the same treatment.

Opium is used in medicine to produce perspiration, allay pain, and lessen nervous excitability in all febrile and inflammatory diseases; also as an anodyne-diaphoretic in rheumatic, neuralgic, and gouty diseases, morbid watchfulness, nervous excitability, restlessness, diarrhea, dysentery, &c. As an antispasmodic in hysterics, colic, convulsive affections, cough, &c., and, indeed, it is very valuable in all forms of disease, where pain, spasm, morbid watchfulness, nervous irritability, and morbid mucous discharges are present. It should not be used in most cases of constipation or where there is a determination of blood to the head. Externally, in the form of liniment or plaster, it is used to relieve pain, and subdue local inflammation, as in neuralgia, rheumatism, irritable blistered surfaces, erysipelas, &c., and as an addition to injections in gonorrhea, dysentery, tenesmus, &c. The dose of Opium varies according to the susceptibility of the patient to its influence, from one-fourth of a grain to two and even three grains, and in some severely painful affections, still larger doses may be required. For the purpose of causing sleep and relief from pain under ordinary circumstances, the dose is one grain; or of the Tincture, from ten to forty drops. When the stomach will not retain it, it may be injected into the rectum, in about double the above quantities for a dose, added to a little water. Poppy flowers are sometimes used in fomentation, to calm irritation, lessen pain, and promote rest.

MORPHIA is the name given to one of the alkaloid principles of Opium. It is more commonly used in the form of a salt, on account of its insolubility when not combined with an acid. The several salts employed more generally, are, the *Sulphate*, the *Muriate*, and the *Acetate* and the *Valerianate of Morphia*. These preparations have essentially all the narcotic properties of Opium, and are generally used in doses varying from one-eighth of a grain to one-half of a grain—one-sixth of a grain being equivalent to one grain of Opium. A solution may be made of either of them, by adding ten grains of the salt to one fluidounce and a half of distilled water, to which add half an ounce of diluted Alcohol, and two or three drops of the particular acid which distinguishes them from each other as salts, as, Sulphuric, Muriatic, or Acetic, &c. The dose of this will be from ten to fifteen drops. The *Valerianate of Morphia* will be found very useful in febrile and inflammatory diseases, to relieve restlessness, wakefulness, or nervous irritability; also in spasmodic affections, delirium tremens, &c.

ORANGE, *Citrus Aurantium*. This well-known fruit is the product of a tree, common to tropical climates. Orange-juice is an agreeable refriger-

ant, useful in fevers, measles, small-pox, &c., and as an antiscorbutic in scurvy. It may be used freely in febrile diseases, more especially when there is a dark or brown coat on the tongue. When the juice is sucked from an Orange, by the patient, care should be taken that he does not swallow any of the membranous portion, or peel, &c., as these are hard to digest, and therefore, unfit for the stomachs of the sick. Orange-peel is frequently used to flavor various medicinal preparations. It is mildly tonic and stomachic. When used in large quantities, it has produced serious, and even fatal symptoms. The Oil of Orange is prepared from the rind; Oil of Neroli, from the flowers.

ORIGANUM. *Origanum Vulgare.* This is a perennial herb, common to Europe and this country. A warm infusion causes perspiration, and tends to promote menstruation, when suppressed from cold. The *Oil of Origanum* is chiefly used as a stimulant and gentle rubefacient, and enters into many liniments, tooth-ache drops, &c.

OXALIC ACID. *Acidum Oxalicum.* This acid is in colorless crystals, having a strong acrid taste, and is soluble in about nine or ten times its weight of cold water. It is a poison, and unfit for internal use. Externally, a solution of it has proved useful in cutaneous cancer, scald-head, and several forms of disease of the skin. Its antidotes, when taken internally in poisonous doses, are, Chalk, or Magnesia, mixed with water, and followed by emetics.

PANSY. *Viola Tricolor.* This is a perennial plant, sometimes called *Hearts-ease*, and which is cultivated in gardens. Combined with Turkey-corn, the plant is a good antisymphilitic. It has also been used in affections of the chest, kidneys, and skin, especially in milk-scald. In doses of from forty to sixty grains, the root is emetic; from twenty-five to thirty grains, purgative; from six to twelve grains, tonic. Both the plant and root should be used when fresh, as drying destroys their active properties.

PARSLEY. *Apium Petroselinum.* This is a well-known biennial plant, the root of which is used as a diuretic in infusion with water or wine. It has been found very useful in dropsy, especially that following scarlet fever, and other exanthematous diseases; and has also been used in retention of urine, gonorrhea, and strangury. The seeds are carminative and diuretic, and are said to poison the parrot, when eaten by that bird. Dose of the infusion, from two to four fluidounces, three or four times a day. The leaves, bruised, are a good application to contusions, swelled-breasts, and enlarged glands; reputed to "dry up the milk" of wet nurses.

PARTRIDGE-BERRY. *Mitchella Repens.* This is a perennial evergreen, creeping herb, growing in dry woods and swampy places, throughout the United States, and having white, very fragrant flowers in June and July, always in pairs, and often tinged with red. The whole vine is used. It is tonic, diuretic, and astringent, and has been used in decoction in suppressed urine, diarrhea, and dropsy. It exerts a powerful tonic influence on the reproductive organs, and is used in decoction, for the purpose of imparting tone and vigor to the uterus, and thereby rendering labor less tedious and painful. Dose of the decoction, from two to four fluidounces, two or three times a day. An ounce of the fresh plant, made into a strong decoction with half a pint of water, strained and an equal quantity of good cream

added, and then the whole evaporated to the consistence of an ointment, forms a good remedy for sore and excoriated nipples; the nipple should be kept anointed with it all the time, except when the child is sucking.

PEACH. *Amygdalus Persica*. The leaves of the Peach-tree are sedative and slightly laxative, and are useful in all inflammations of the stomach and intestines, in doses of a table-spoonful of the cold infusion, every hour or two. They also have been found beneficial in irritable bladder, ischuria, hooping-cough, sick-stomach, hematuria, and dysentery. The kernels possess similar properties, and may be used in the form of tincture, infusion, or syrup. Four ounces of the bruised kernels to a quart of Brandy, forms a good tonic, and has been successfully used in intermittents and leucorrhœa, in doses of a teaspoonful, three or four times a day.

PENNYROYAL. *Hedeoma Pulegioides*. This well-known annual plant is stimulant, diaphoretic, emmenagogue, and carminative. It is generally employed in warm infusion to promote perspiration, restore suppressed lochia, and suppressed menstruation, when not of long standing. It is also used in the flatulent colic of infants. The Oil of Pennyroyal, or its Tincture, is used in hysteria, hooping-cough, spasms, &c.; and externally, as a rubefacient in rheumatism and similar affections. Mixed with Linseed Oil, it proves a good application to burns. Dose of the Oil, from two to ten drops.

PEONY. *Pœonia Officinalis*. This is a well known perennial plant, cultivated in gardens on account of the beauty of its flowers. The root is tonic and antispasmodic; it has been used alone, or in combination with other agents, in St. Vitus' dance, epilepsy, spasms, hooping-cough, and various nervous affections. Dose of the powdered root, one drachm; of the tincture, one or two fluidounces; of the juice of the fresh root, one or two fluidrachms; which doses may be repeated three or four times a day. The seeds are said to possess similar virtues, in doses of thirty or forty grains.

PEPPERMINT. *Mentha Piperita*. This well-known perennial plant is a stimulant, antispasmodic, carminative, and stomachic; it is much used in the form of essence of peppermint, in flatulent colic, hysterics, spasms or cramps of the stomach, to check nausea or vomiting, to allay the griping of cathartics, and to disguise the unpleasant taste of other medicines. The dose is from ten to sixty drops in sweetened water. The warm infusion may be drank freely. The fresh herb bruised, and applied over the stomach and bowels, will often allay sick stomach, and is useful in the summer-complaint of children.

PERSIMMON. *Diospyros Virginiana*. This tree is common in the Middle and Southern States. The bark and unripe fruit are the parts used. They are astringent and tonic, and have been efficacious in chronic diarrhea, chronic dysentery, flooding from the womb, &c. The bark has been used in fever and ague. An infusion, syrup, or vinous tincture of these agents may be employed in doses of a table-spoonful or more, every two or three hours. The infusion forms an excellent wash and gargle in ulcerated sore mouth and throat; and an injection in leucorrhœa. The ripe fruit is grateful and healthy.

PERUVIAN BARK. This is obtained from several South American trees, as the *Cinchona Calisaya*, *C. Condaminea*, *C. Micrantha*, &c. There

are three varieties, the Pale, the Yellow, and the Red barks. The Pale bark yields a bitter, slightly astringent, pale or greyish fawn-colored powder, which contains a large amount of Cinchonia, and but little Quinia. The Yellow bark is of a brownish-yellow color, more bitter than the Pale, and contains more Quinia than Cinchonia. The Red bark forms a reddish-brown powder, and contains both Quinia and Cinchonia in quantity. There are several other varieties, but the above are the principal ones. Boiling water, proof-spirit, alcohol, and diluted acids, take up the active constituents of these barks. Peruvian bark is tonic and antiperiodic, and is used in all diseases of a periodical character, as fever and ague, remittent fever, neuralgia, epilepsy, epidemic diseases, &c. It is also employed as a tonic in typhoid conditions, small-pox, scarlet fever, carbuncle, gangrenous erysipelas, and in all cases where there is much exhaustion of the system. The dose of the bark, in powder, as a tonic, is from ten to sixty grains; as an anti-periodic, from twenty to sixty grains; of the infusion or decoction, one or two fluidounces; of the extract, from five to thirty grains. Externally, the powdered bark has been efficaciously applied as a poultice to felons, fetid and gangrenous ulcers, &c. The following are the several preparations obtained from Peruvian bark:—

1. *Cinchonia*. This is a white, bitter, alkaline, crystalline substance, which is insoluble in Chloroform, water, or Alcohol. Its salts, the *Acetate*, and *Disulphate of Cinchonia*, are also white, crystalline bodies, and are much more soluble than the pure alkaloid. They are used as substitutes for Quinia, and its salts, in doses of from one to four grains, three times a day.

2. *Sulphate of Quinia*. Quiniæ Sulphas. Pure Quinia is seldom used on account of its insolubility; but in the form of a salt with some acid, as the Sulphate, Acetate, Muriate, &c., it is a common remedy. The Yellow bark is generally employed in the preparation of Quinia or its salts. Sulphate of Quinia, is in snow-white, thread-like, satiny crystals, without odor, but possessed of a very bitter taste, and soluble to a certain extent in alcohol or water, but completely so on the addition of a few drops of Sulphuric Acid. It is febrifuge, tonic, and antiperiodic, and is very useful in all febrile diseases, acute rheumatism, neuralgia, dyspepsia, debility, epidemic diseases, and every disease characterized by periodicity. It should not be used when there is irritation or inflammation of the stomach, or when symptoms of nervous irritability, wakefulness, or restlessness, are present in fevers. These must first be overcome. In some persons its use causes headache, sickness, or irregular action of the bowels, which effects may be generally obviated, by combining it with Sulphate of Morphia, Extract of Stramonium, or both. Large doses produce many unpleasant symptoms. The evil results following large doses or the injudicious administration of Quinia, has caused many persons to object to it as a medicine. This is wrong. Quinia is a safe and very superior remedy, in proper hands. As well might we reject all active and useful agents, because, when improperly used, they produce deleterious consequences. Again, the Quinia, especially that imported into the Western States for many years past, has been much adulterated with agents calculated to cause the mischief attributed to the salt; and, it must also be remembered, that many of the symptoms following the use of Quinia, are the legitimate results of disease itself, as an enlarged spleen, a deranged condition of the nervous system, &c.; or, are the deplorable consequences of a combined mercurial treatment, which has been and still continues to be a common practice in many parts of this country.

Quinia may be used in all diseases connected with an enfeebled state of the system, and especially in the debility attending convalescence from most

acute and chronic diseases; it is not so useful in anemia or chlorosis as the preparations of Iron. Its dose is from half a grain to three grains, repeated every one, two, or four hours, as the urgency of the case may require. Ten grains of Sulphate of Quinia dissolved in half a fluidrachm of Elixir of Vitriol, and added to a fluidounce of water, forms a very excellent solution, which may be given in doses of twenty drops, every hour or two, in a little water, aromatic syrup, or wine. A solution is frequently made by adding equal parts of Sulphate of Quinia and Tartaric Acid to any desired quantity of water, and apportioning the dose according to the strength of the solution. Externally, a solution of Sulphate of Quinia, forms a valuable application to indolent ulcers, bubos, chancres, and chronic mucous inflammations. The *Acetate*, *Muriate*, *Phosphate*, and *Citrate of Quinia*, possess analogous properties, in similar doses, but are not usually adopted in the practice of this country.

3. *Valerianate of Quinia*. *Quiniæ Valerianas*. This salt is a combination of Quinia with Valerianic Acid. It is in white, satiny, acicular crystals, having the unpleasant odor of Valerianic Acid, soluble in alcohol, and partly so in water. It loses its strength upon exposure to the atmosphere, the Valerianic Acid gradually evaporating from it. It is tonic, febrifuge, and sedative, and is recommended in headache of a periodic character, and in febrile and other diseases, to relieve wakefulness, restlessness, or nervous irritability; the dose is from half a grain to two grains, as often as required.

PHOSPHORUS. This is a colorless or yellowish, translucent, flexible and wax-like substance, prepared from bones; it is tasteless, has a strong, peculiar, garlicky odor, and is to a certain extent soluble in alcohol, ether, and the oils; heat aids its solution. It is very inflammable, burns when exposed to the air, on which account it should be kept covered with water. It is apt to cause inflammation of the stomach and death, when swallowed in substance, on which account it should always be administered in solution, and even then its effects must be closely watched. The following is a good formula for its internal administration:—Take of Phosphorus, cut in pieces, four parts; Ether, two hundred parts; mix, and let it stand in a dark place for a month, keeping it well stopped; then add one hundred parts of Oil of Cinnamon, and mix thoroughly together. The dose is from ten to fifteen drops, every three hours, in some mucilaginous fluid. Keep the mixture well closed to prevent the evaporation of Ether. Phosphorus has been recommended in the impotence of old and debilitated persons, in dropsy, typhus fever, marasmus, amaurosis, paralysis, mania, and in extreme prostration of the vital powers. Emetics, with copious draughts of water and magnesia, are the antidotes to it when taken in substance, or in a poisonous dose.

PINK ROOT. *Spigelia Marilandica*. This is a perennial herb growing in dry rich soils in the Middle and Southern States. The root is yellowish-brown externally, in small, numerous, crooked, and wrinkled fibers, has a faint odor, and a sweetish-bitter taste. It is an anthelmintic, and is much used to remove worms in children, in doses of from five to twenty grains of the powdered root, for a child two or three years old; or a fluidounce or two of a strong infusion. Large doses purge, and produce narcotic symptoms. The dose for an adult is one or two drachms twice a day for several successive days, and then followed by a cathartic.

PIPSISSEWA. *Chimaphila Umbellata*. This is a small evergreen,

perennial herb, common in the woods of the United States, and is also known by the name of *Prince's Pine*. The herb is diuretic, tonic, alterative, and astringent. It has been used in scrofula, chronic rheumatism, dropsy, affections of the kidneys, catarrh of the bladder, &c. It lessens the lithic acid in the urine. Dose of the decoction, from one to four fluidounces; of the extract, from ten to twenty grains, three or four times a day.

PLANTAIN. *Plantago Major*. This is a well known perennial herb, common to Europe and America. The tops and roots in strong decoction, have been highly recommended in syphilitic, mercurial, and scrofulous diseases, in the dose of from two to four fluidounces, three or four times a day. It is likewise reputed beneficial in excessive menstruation, leucorrhea, hematuria, diarrhea, dysentery, and piles. The juice taken internally in doses of a fluidounce every hour, has been advised as an antidote to the bites of venomous serpents, spiders, and insects; it must, likewise, be applied to the wound. Externally, the bruised leaves, or an ointment made with them, is useful in wounds, ulcers, ophthalmia, salt-rheum, erysipelas, and some other affections of the skin.

PLEURISY ROOT. *Asclepias Tuberosa*. This is a perennial plant, common to this country. The root is white and fleshy, and when dried has a bitterish, not unpleasant taste, and is readily powdered. In warm infusion or decoction, it is diaphoretic, expectorant, and carminative, without stimulating, and is useful in febrile diseases, pleurisy, inflammation of the lungs, acute dysentery, acute rheumatism, &c. A warm infusion of equal parts of Pleurisy Root, and Wild Yam Root, is very efficient in flatulency and colic. And two parts of Pleurisy Root, in powder, mixed with one part of Unicorn Root, will be found of much service in cases of falling of the womb caused by congestion of that organ; it may be given in doses of from thirty to sixty grains, three or four times a day. Dose of the powder, from twenty to sixty grains, three or four times a day; of the decoction or infusion, from two to four fluidounces, every hour or two, until free perspiration is induced.

Asclepidin is the concentrated preparation obtained from the root; it is obtained by distillation of the alcohol from a saturated tincture added to water. It possesses all the properties of the root, in doses of from one to five grains, three or four times a day. Combined with equal parts of Aletridin and Alcoholic Extract of Black Cohosh, it forms a valuable pill for various derangements of the uterine functions.

POISON HEMLOCK. *Conium Maculatum*. This is a biennial, umbelliferous plant, a native of Europe and Asia, and naturalized in this country. The leaves and seeds are the parts used. The leaves when dry are dark-green in color, with a powerful narcotic odor, and a bitter, disagreeable taste. The seeds are of an orange-gray color, faint odor, and a taste similar to that of the leaves. The whole plant is a poisonous narcotic; and its best form of administration is that of the inspissated juice,—the extract is worthless. It promotes sleep; lessens inordinate action of the heart, when this organ is enlarged; affords relief in the neuralgic pains attending cancerous diseases; and is very useful in scrofula, goitre, and all tuberculous affections, either alone, or conjoined with the Iodide of Iron. All affections attended with an excited or excitable condition of the circulation, will be ameliorated by its employment. The venereal appetite is lessened by its use. The dose of the inspissated juice is from half a grain

to two grains, three or four times a day. The leaves may be used as a poultice to painful tumors, ulcers, &c. The fresh leaves made into a saturated tincture with ether, then filtered, and the ether allowed to evaporate, form a rich dark-green ethereal extract, which may be used in doses varying from one-sixteenth of a grain to one-half. As a narcotic and resolvent poultice the leaves of another plant, the *CICUTA MACULATA* or Water Hemlock, are sometimes substituted for the above; it is more powerful than the Conium.

POISON OAK. *Rhus Toxicodendron*. This is a creeping shrub common to this country, the leaves of which possess medicinal properties. The *Poison Sumach*, or *Poison Ash*, *Rhus Venenata*, and the *Poison Vine*, or *Poison Ivy*, *Rhus Radicans*, possess similar virtues; the *R. Toxicodendron* and *R. Radicans*, are vines or creeping shrubs; while the *R. Venenata* is a small tree, sometimes, but erroneously, called Poison Elder, and Poison Dog-wood. These vines grow in woods, fields, and along fences, and yield a milky juice when wounded, which gradually grows black. The fresh leaves are the parts used, and their best form for use is that of a saturated tincture, which should be preserved in well-corked vials. It has been successfully used in paralysis of the lower half of the body, of the bladder, and of the rectum, in chronic rheumatism, cutaneous diseases, and some diseases of the eye. Dose of the tincture, from five to ten drops, three times a day. Large doses are dangerous. The *Rhus Pumilum* is considered the most poisonous plant of this genus. These plants produce vesication and even febrile symptoms when in contact with some persons—and even the emanations from them are said to produce the same effects on certain constitutions. (See Poisons.)

POKE. *Phytolacca Decandra*. This is a well known perennial plant, common to nearly all parts of the United States, and is also known by the names of *Garget*, *Scoke*, *Pigeon-berry*, &c. The root, leaves, and berries, are the parts used. Poke is emetic and cathartic, in doses of from twelve grains to half a drachm, being, however, rather slow in its action. Large doses occasion prostration, with hyperemesis or hypercatharsis, a peculiar tingling feeling over the body, and other alarming symptoms. In small doses, say from two to six grains, it exerts an alterative influence which renders it valuable in syphilis, rheumatism, scrofula, diseases of the skin, &c. Roasted in hot ashes until soft, and then mashed and applied as a poultice, the root is unrivalled in felons and tumors of various kinds. It discusses them rapidly, or, if too far advanced hastens their suppuration. The leaves in warm fomentation form a valuable application in painful piles. The inspissated juice of the leaves, in doses of from one to five grains, three times a day, is very efficacious in syphilis, chronic rheumatism, and pains in the bones from syphilis. Externally it has been recommended as an application to indolent ulcers, and cancer. A saturated tincture of the leaves has been successfully employed in chronic rheumatism, and in syphilitic diseases, in doses of one or two teaspoonfuls, two, three, or four times a day. An ointment made by adding one drachm of the powdered leaves, or root, to one ounce of lard, has been used as an application to ulcers, porrigo, itch, scald-head, &c.

POMEGRANATE. *Punica Granatum*. This is a beautiful shrub, a native of Syria, Persia, the warm parts of Europe, West Indies, &c. The bark of the root, and the rind of the fruit are the parts used. The bark of

the root is of a grayish-yellow color externally, with green specks, yellow internally, and brittle. The rind of the fruit is brown externally, yellow internally, hard, brittle, inodorous, but of a very astringent, bitter taste. A decoction of these is astringent, and may be used in all cases where this class of agents is indicated. Its principal employment, however, is for the expulsion of tape-worm; two ounces of the bark are steeped in two pints of water for twelve hours, then the whole boiled down to one pint, strained, and given in wineglassful doses every two hours, until the whole is taken. It usually causes several stools, an increased flow of urine, or nausea and vomiting. The doses usually require to be taken for several successive mornings before the whole of the worm passes away. Laxatives should be taken from time to time. It is said to act with the greatest certainty when the joints of the worm come away naturally.

POTASSA. This is used in medicine under the name of *Caustic Potash*, or *Hydrate of Potassa*. It is obtained in the form of cylindrical sticks, or in flattened fragments, with an alkaline odor and taste; it attracts carbonic acid from the atmosphere, and is soluble in water or alcohol. Caustic Potash is very corrosive, rapidly destroying the soft tissues with which it comes in contact, causing considerable inflammation, followed ultimately by the separation of a slough. In using it, the caustic rod must be covered with paper to protect the finger, and care must be taken to prevent it from spreading on the integuments around the part to be acted on; in applying it, one end of the rod is moistened, and gently rubbed over the affected part. It is generally applied to the destruction of cancers, tumors, &c., and to unhealthy or malignant ulcers. Acids combine with it and render it harmless. Among the preparations of Potassa used in medicine, are the following:—

1. *Bicarbonate of Potassa.* Potassæ Bicarbonas. This is a well-known salt under the name of *saleratus*; but the pure salt is in colorless, transparent crystals, inodorous, of a slightly alkaline taste, and soluble in water. It is antacid, antilithic, and diuretic, and is generally preferred to the carbonate, being less irritating and unpleasant. The dose as an antacid and antilithic is from five to twenty grains; as a diuretic, one or two drachms.

2. *Bichromate of Potassa.* Potassæ Bichromas. This salt is in orange-red, prismatic crystals, having a cooling and bitter taste, and soluble in water. It is a caustic and irritant, and has been used in a saturated solution, as an application to indolent ulcers, warts, piles, tumors, &c. From thirty to sixty grains may be dissolved in a fluidounce of water.

3. *Bitartrate of Potassa.* Potassæ Bitartras. This is generally known as *Cream of Tartar*. It is refrigerant, diuretic, and cathartic. Dissolved in water, and sweetened with sugar, it forms an agreeable refrigerant drink in fevers. Combined with sulphur, it is used as a laxative and alterative, and is often given in some diseases of the skin. In large doses it causes watery stools and an increased discharge of urine, on which account it is much employed alone, or with other agents, in dropsical affections. The dose as a cathartic is from two to six drachms; as a laxative, one or two drachms. In dropsy it may be given in doses of from one to three drachms, in water, several times a day.

4. *Carbonate of Potassa.* Potassæ Carbonas. This salt when impure forms the ordinary *Pearlash of Commerce*. When pure it is known by the ancient name, *Salt of Tartar*. It is in small, white, opaque grains, having a caustic, alkaline taste, and deliquesces on exposure to the air; it is very

soluble in water. In large doses it is poisonous; and its proper antidotes are vinegar, lemon-juice, or sweet oil. In medicinal doses, it is antacid, antilithic, and diuretic. It has been used in urinary affections attended with lithic acid deposits, in the dose of seven grains, repeated five times a day. It has also been used in dyspepsia with acid stomach, dropsy, jaundice, &c. Externally, it has been used in lotion or ointment, in some skin diseases; two or three drachms being added to a pint of water, or, from ten to sixty grains rubbed with an ounce of prepared lard.

5. *Chlorate of Potassa*. Potassæ Chloras. This is a white crystalline salt, in pearly, four or six-sided rhomboidal plates, permanent in the air, and soluble in water; it has a cooling, saline taste. It is refrigerant and diuretic, and is said to give a bright scarlet color to the venous blood, and to pass unchanged into the urine. It has been beneficially used in scurvy, syphilis, liver affections, cholera and malignant fevers; its dose is from ten to thirty grains. The solution made by dissolving a drachm of the salt in four fluidounces of water, is useful as a mouth wash in cancrum oris, and erysipelatous inflammation of the mouth and fauces, occurring in black tongue. It lessens the fetor and salivation in cancrum oris, and promotes granulation.

6. *Nitrate of Potassa*. Potassæ Nitras. This is a well-known salt, under the names of *Saltpetre* or *Nitre*. In large doses it is an irritant and cathartic, and produces alarming symptoms. No antidote is known to its more serious effects; the best course is to administer mucilaginous diuretics in large quantity, opiates, &c., to allay pain and irritation, and stimulants to obviate prostration. It is usually employed as a diuretic, in doses of from ten to sixty grains, and as a sedative refrigerant, in doses of from ten to twenty grains. It should always be well diluted with water before swallowing it. It has been used in fevers, acute rheumatism, inflammatory diseases, dropsical affections, and active hemorrhages. Paper, saturated with a solution of Nitre, dried, burned, and the nitrous fumes inhaled, is said to have relieved spasmodic asthma. When too long continued, its use occasions pain in the stomach.

7. *Sesquicarbonate of Potassa*. Potassæ Sesquicarbonas. This is the name given to the *Vegetable Caustic* of the present day, which differs materially from that formerly made, being milder and less severe in its action. Whether it is a true Sesquicarbonate remains yet to be determined. It forms a white powder, having an alkaline taste and odor, rapidly attracting moisture from the atmosphere, and is very soluble in water. It should be kept in green glass bottles, and well corked. The original *Vegetable Caustic* is much more severe in its action, and is prepared by evaporating a strong ley of Oak or Hickory ashes to dryness, powdering it, and keeping it well secured in vials. It forms a dingy-gray, or greenish, impure Caustic Potassa, and is very deliquescent. These preparations are escharotic, and are used as external applications to cancers, indolent ulcers, fungous growths, chronic inflammation of mucous surfaces, fistulas, &c. They are less painful than Caustic Potassa, excite but little inflammation, and have a very feeble action on healthy tissues.

8. *Solution of Potassa*. Liquor Potassæ. This is a clear, transparent, caustic fluid, of an alkaline odor and taste, and which should be kept in green glass bottles, thoroughly corked, as it acts on white flint glass, and absorbs carbonic acid from the atmosphere. It is used as an antacid, antilithic, and diuretic. In scalding of the urethra from gonorrhea, and in combination with ten or twelve drops of laudanum, it will give prompt relief. When too long used it injures the stomach. The dose is from ten

to thirty drops in sweetened water or mucilage, repeated two or three times a day. If not well diluted, it will soon impair the stomach; the antidotes to it, when taken not sufficiently diluted, are lemon juice, vinegar, or sweet oil.

POTASSIUM. This is a soft, bluish-white metal, which forms the Alkali *Potassa*, by the action of oxygen. There are several preparations of it used in medicine, among which are the following:—

1. *Bromide of Potassium.* Potassii Bromidum. This is a colorless salt, in cubic or quadrangular crystals, having a pungent or salt-like taste, and being very soluble in water. It is considered alterative and resolvent, and has been used in enlarged spleen, scrofula, and secondary syphilis, in doses of from three to ten grains, three times a day, in pill or solution. The ointment, made by adding from two scruples to two drachms of the Bromide with an ounce of lard, is said to be efficient in goitre, and scrofulous affections, in conjunction with its internal use.

2. *Cyanuret of Potassium.* Potassii Cyanuretum. This is a white, amorphous salt, deliquescent in moist air, soluble in water, having a bitter-almond odor and taste. When of a yellow color, it contains iron. It is poisonous, acting precisely like Prussic (Hydrocyanic) Acid. It has been proposed as a substitute for this Acid, in doses of one-eighth of a grain, dissolved in distilled water. It acts as a sedative and antispasmodic, relieving cough, asthma, hooping-cough, and morbid irritability of the stomach.

3. *Iodide of Potassium.* Potassii Iodidum. This salt forms in white, opaque, cubic or quadrangular crystals, having a feeble odor of Iodine, and a sharp, saline taste. They are deliquescent in moist air, freely soluble in Alcohol, and in about two-thirds their weight of water. They are very liable to adulterations, and the salt is sometimes erroneously called *Hydriodate of Potash*. Iodide of Potassium is an irritant in large doses, producing many unpleasant symptoms. In medicinal doses, it is alterative and diuretic, and has been found very efficacious in goitre, scrofulous diseases, rheumatism, secondary syphilis, affections of the liver, enlargement of the heart, derangement of the functions of the womb, and all tubercular diseases. When taken for a length of time, it is apt to cause salivation, and sometimes a catarrhal affection, &c., which go off upon the suspension of the medicine. The dose is from two to ten grains; it should always be given in the state of a well-diluted solution, and on account of its numerous chemical relations with other bodies, ought to be prescribed in the simplest possible shape.

4. *Sulphuret of Potassium.* Potassii Sulphuretum. This preparation, also called *Liver of Sulphur*, and *Hepar*, is a mixture of Sulphur and Potassium. It is a brittle solid, of a liver-brown color, inodorous, except when moistened with water, which disengages an offensive gas, and of an unpleasant, alkaline taste; it is soluble in water. Large doses produce dangerous symptoms. In doses of from two to ten grains, three or four times a day, in solution with syrup, or given in pill-form with liquorice, it is said to increase the pulse, as well as the mucous secretions. It has been used in chronic rheumatism, catarrh, asthma, hooping-cough, &c. Externally, ten to thirty grains, dissolved in a fluidounce of water, has been found efficacious in scabies, liver-marks, morph, and other skin diseases.

PRICKLY ASH. *Xanthoxylum Fraxineum.* This is a shrub, common to the United States, the bark and berries of which are used in medicine.

The bark is met with in quilled fragments of various sizes, of a grayish-white color, externally, and occasionally armed with prickles; it is light, easily powdered, and nearly inodorous, and having an acrid, bitterish taste. The capsule of the fruit or berries are about two or three lines in diameter, brownish, and covered with excavated dots; they have a faint, aromatic odor, and a warm, pungent, peculiar, aromatic taste, and contain the medicinal virtues of the fruit. Prickly-Ash bark is stimulant, tonic, alterative, and sialagogue, and has been efficacious in chronic rheumatism, syphilis, liver affections, colic, scrofula, and paralysis of the tongue and mouth. It will produce salivation, when given in small doses, and combined with blue flag and mandrake. Externally, it forms an excellent stimulating application to indolent and malignant ulcers. A dark-greenish-black ethereal oil has been obtained from the bark, possessing its virtues in a concentrated degree; it is soluble in alcohol, ether, and alkaline solutions. Dose of powdered Prickly-Ash bark, from ten to thirty grains, three times a day.

Prickly-Ash Berries are stimulant, carminative, and anti-spasmodic, acting especially on mucous tissues. Combined with Poke-Berries, in the form of tincture, they are invaluable in chronic rheumatism, and syphilitic diseases. The tincture of the berries is also useful in all nervous diseases, spasms of the bowels, flatulency, and in diarrhea. In tympanitic distension of the bowels, during peritoneal inflammation, it is a safe and superior remedy, when used internally, and as an injection. It has also been used with great benefit in Asiatic Cholera. An oil is prepared from the berries, of a dark-brown color, possessing all their virtues in a concentrated degree. One pound of the berries yields about four fluidounces of the oil. Dose of the tincture of the berries, from ten drops to a fluidrachm, as often as required, in sweetened water; of the oil, from two to ten drops on sugar, in mucilage or in tincture.

Xanthoxylum, is the name given to the blackish oleo-resinous principle obtained from the bark, by adding a saturated tincture to water, and distilling off the alcohol; it is soluble in ether or alcohol, and has a peculiar, bitterish taste, succeeded by a persistent pungency. It possesses stimulant, tonic, alterative, and sialagogue properties; and is useful in chronic rheumatism, dyspepsia with distress after eating, in low typhoid conditions, and in debility following long protracted or exhausting diseases. Its dose is from one to three grains, three or four times a day.

PRICKLY ELDER. *Aralia Spinosa*. This tree is found in the Southern and Western States, growing in low, damp woods, and known by the names of *Toothache Tree* and *Southern Prickly-Ash*. The bark is the part used; it is thin, grayish externally, yellowish-white within, beset with prickles, having a peculiar, aromatic odor, and a bitterish, pungent, acrid taste. It is stimulant, diaphoretic, and alterative; the fresh bark is emetic and cathartic. The tincture or powder has been of service in chronic rheumatism, syphilis, and in some diseases of the skin. In the cholera of 1849—50, it was much used, in cases where cathartics were required, but where their action was very difficult to control, in the following combination:—Take of Compound Powder of Jalap one drachm, Prickly Elder bark, powdered, one drachm, Compound Powder of Rhubarb two drachms; mix, and give in half-teaspoonful doses, every half-hour or hour, until it operated. In no case in which it was given, did it produce a tendency to looseness or choleraic discharges. The bark is a powerful sialagogue, and is valuable in diseases where the mouth and throat are dry and parched, as a very small portion of the powder will cause a moisture, and relieve difficult breathing; also useful in sore throat.

PRIVET. *Ligustrum Vulgare*. This is a small shrub growing in Europe and the United States, also known by the name of *Prim*; the leaves are the parts used. They are astringent, and useful in chronic diarrhea and dysentery, summer-complaint of children, ulceration of the stomach and bowels, and diabetes. They may be used either in decoction or powder; from thirty to sixty grains of the latter, three times a day; or from two to four fluid-ounces of the former. The decoction is also efficient as a gargle in ulcers, of the mouth and throat, and as an injection in gleet, ulceration of the bladder, leucorrhea, and ulcerated ears with offensive discharges.

PUMPKIN. *Cucurbita Pepo*. The seeds of this well-known plant are mucilaginous and diuretic; they are used in infusion, the seeds being placed in water without bruising them. The infusion may be used in strangury, scalding of urine, and other urinary affections; also in inflammation of the stomach and bowels, and in fevers; it may be drank freely. An Oil of Pumpkin seeds is obtained by expression, which in doses of from six to twelve drops several times a day, is said to be a most certain and efficient diuretic, giving quick relief in scalding of the urine, spasmodic affections of the urinary passages, and has cured gonorrhea. The oil is likewise employed to remove tape-worm.

PYROLIGNEOUS ACID. *Acidum Pyroligneum*. *Acidum Aceticum Empyreumaticum*. This is an impure acetic acid obtained from wood by distillation. It is a brown, transparent liquid, having a strong smoky smell. It is stimulant and antiseptic, and is used as a local application for arresting or preventing sloughing, for cleansing old sores, abscesses, &c.; also used in burns, scalds, ring-worm, scald-head, excoriated nipples, and as a gargle in inflamed and ulcerated sore throat, and malignant scarlet fever. Internally, it is useful in all cases where an antiseptic is indicated, in doses of from ten to thirty drops. The pyroligneous tar forms a valuable irritating plaster.

QUASSIA. *Picræna Excelsa*. This is a tall tree growing in Surinam and some of the West India Islands. The wood is the part used; it is inodorous and intensely bitter. Quassia is tonic, febrifuge and anthelmintic; it has been used in intermittent and remittent fevers, dyspepsia, debility during convalescence from exhausting diseases, and for worms. It preserves animal matters from decay, and acts as a powerful narcotic poison on flies and other insects. Dose of the powder, thirty grains; of the infusion or decoction, from one to three fluidounces; of the tincture, one or two fluidrachms; of the extract, from two to ten grains. An injection of the decoction will remove the pin or thread worms.

QUEEN OF THE MEADOW. *Eupatorium Purpureum*. Likewise known by the names of *gravel-root*, *trumpet-weed*, &c. It is a perennial herb, common to the country in low, swampy places, the root of which is the part used; it consists of a blackish woody head from which proceed numerous long fibres of a dark brown color. Its smell resembles old hay, and its taste is aromatic, slightly bitter and astringent. It is a valuable diuretic, stimulant, and tonic, and is useful in dropsical affections, gravel, strangury, all chronic diseases of the urinary organs, hematuria, gout and rheumatism. It is generally used in decoction, from two to four fluidounces, three or four times a day.

Eupurpurin is the name given to a thick, dark greenish-brown oleo-resin

prepared from the root by adding the tincture to water, and distilling off the alcohol. It has a faint smell, and a disagreeable taste, and is soluble in ether or alcohol. In three-grain doses, repeated three or four times a day, it is an active diuretic, and may be used alone, or in combination with Castile Soap, in all diseases in which the root is of service.

QUEEN'S ROOT. *Stillingia Sylvatica*, more commonly called *Stillingia*. This is a perennial herb common to the sandy soils of the Southern States, and which yields a milky juice on being wounded. The root is large, thick, and woody, has a peculiar odor, and a bitter, acrid, persistent taste. In large doses it is emetic and cathartic, producing, in many instances, a peculiar, disagreeable, burning sensation in the stomach, or in some part of the intestines, with more or less prostration of the system. In small doses it is an alterative of much value in scrofulous, syphilitic, rheumatic, liver, and skin diseases; or wherever an alterative is indicated. It has also been beneficial in the cure of chronic laryngitis and bronchitis, and in leucorrhea. The dose is from ten to twenty grains of the powder; from thirty to sixty drops of the tincture; and one or two fluidounces of the decoction. The oil obtained from the root is very penetrating, acrid and stimulating, and is used externally, with other agents, in various diseases. The root loses its virtues by age.

RED CEDAR. *Juniperus Virginiana*. This is a well-known evergreen tree common throughout the United States. The leaves are emmenagogue, diuretic, diaphoretic, and anthelmintic, and are useful in suppressed menstruation, chronic rheumatism, scalding of urine, and derangements of the kidneys and bladder. The oil makes a valuable stimulating application for rheumatic pains, bruises, &c. Dose of the powdered leaves, one or two drachms; of the infusion, from one to four table-spoonfuls; of the oil, from five to fifteen drops. The excrescences produced on the small branches by the puncture of an insect, are called *Cedar Apples*, and are very useful when recent, as a vermifuge, in doses of from ten to twenty grains, three times a day.

RED CHICKWEED. *Anagallis Arvensis*. This is an annual plant growing in Europe and this country, bearing small scarlet flowers in June and July. The leaves have been recommended in hydrophobia, dropsy, mania, epilepsy, delirium, and nervous diseases generally. In the form of poultice, the fresh plant, bruised, forms a good application to old and ill-conditioned ulcers. Its precise properties and mode of action when taken internally, are not fully known.

RED CLOVER. *Trifolium Pratense*. This is a well-known biennial plant, common to the United States. A strong decoction of the blossoms evaporated to an extract is said to be an excellent remedy in ill-conditioned and malignant ulcers, cancers, and deep, ragged, indolent sores from burns. It possesses a peculiar soothing property, proves an efficacious detergent, and promotes a healthful granulation.

RED ROOT. *Ceanothus Americanus*. This shrubby plant is found in all parts of the United States, and is also known by the names of *New Jersey Tea*, and *Wild Snowball*. The bark of the root has a taste and odor resembling those of the peach leaf; it is astringent, expectorant, sedative, and antispasmodic. A table-spoonful of the decoction, three or four times

a day is useful in gonorrhea, after the inflammatory symptoms have subsided, dysentery, diarrhea, asthma, hooping-cough, chronic bronchitis, &c. The decoction is also useful as an injection in gleet, and leucorrhea, and as a wash or gargle in all ulcerations of the mouth and throat.

RED ROSE. *Rosa Gallica.* The petals of the red rose are slightly tonic and astringent; a decoction of them has been used in bowel-complaints, passive hemorrhages, and in excessive mucous discharges. It is more commonly employed as an application in chronic inflammations of the eye. The confection of roses is much used for the purpose of giving medicines in pill form. *Rose water* is distilled from the petals of the *Hundred-leaved rose*, *Rosa Centifolia*; it is much used in collyria, and lotions.

RED SAUNDERS. *Pterocarpus Santalinus.* This tree is a native of Ceylon, the wood of which has a peculiar, feeble odor a slightly astringent taste, and imparts a red color, to spirituous preparations but not to water. It possesses tonic and astringent properties, but is seldom employed unless for coloring tinctures, &c.

RESIN OR ROSIN, *Resina.* After the oil has been distilled from the turpentine of the pine trees, a solid substance is left, which is the ordinary rosin of commerce. It is seldom given internally, though it will be found advantageous in weak stomachs, and in bleeding piles, in doses of from twenty to sixty grains of the powder, in molasses or syrup. Its principal use is to give consistency and adhesiveness to plasters, and ointments. The vapor from resin, when heated, has been inhaled in chronic bronchitis, and laryngitis, with benefit; and the fumes from burning resin, if received upon the parts, will, it is said, remove the irritation attending piles and prolapsus ani.

RHATANY. *Krameria Triandria.* This is a South American shrubby plant, the root of which is a powerful astringent, and has been of much service in excessive menstruation, passive hemorrhages, chronic diarrhea, chronic mucous discharges, &c.; and in decoction as an injection in leucorrhea, and gleet. It is an excellent styptic in nose-bleeding, bleeding from the cavity of an extracted tooth, or the surface of a wound, in spongy and bleeding gums, and as a local application to falling of the bowel. Dose of the powder, from ten to thirty grains; of the tincture, from one to four fluidrachms; of the infusion or decoction, from one to four fluidounces; of the extract, from ten to twenty grains.

RHUBARB. *Rheum Palmatum.* The drug, rhubarb root, is obtained from several species of *Rheum*, which are found in various parts of the world, and which constitute the several varieties known as *Russian*, or *Turkey Rhubarb*, *Chinese* or *East India Rhubarb*, and *European Rhubarb*. The best rhubarb has a strong, peculiar odor, a peculiar, aromatic, bitterish taste, with a sense of grittiness, and is readily reduced to a lively yellow powder. It imparts its virtues to water, but more readily to proof spirit. Rhubarb is cathartic, astringent, and tonic. In doses of from ten to thirty grains, it acts as a purgative, increasing the muscular action of the intestines, rather than augmenting their secretions, and affects the whole intestinal canal. From five to ten grains act as a laxative, and are useful in cases of constipation, dyspepsia, piles, derangements of the liver, &c.; its mildness and tonic qualities render it peculiarly applicable to infants, as a laxative, especially

when enfeebled digestion and irritation of the alimentary canal are present. In acute or chronic diarrhea or dysentery, in convalescence from exhausting diseases, and in some irritable habits where the mildest of all other laxatives are apt to excite hypercatharsis, Rhubarb is an appropriate medicine; it causes fecal, rather than watery discharges. Its astringency is counteracted by the addition of Soap, or an alkali; toasting it, improves its astringency but lessens its purgative properties. From one to five grains act as a tonic. The tincture or syrup is laxative in doses of one or two drachms.

ROCK-BRAKE. *Pteris Atropurpurea*. This is a perennial fern, common to the United States, and possessing astringent and anthelmintic properties. A decoction of the plant, taken moderately, is useful in diarrhea, dysentery, night-sweats, and hemorrhages; it also forms an excellent local application to obstinate and ill-conditioned ulcers, ulcerations of the mouth and throat, and leucorrhea. A strong decoction is useful as a remedy for worms.

ROSEMARY. *Rosmarinus Officinalis*. This is a perennial, evergreen shrub, native of the Mediterranean countries, and introduced into this country; the tops are the parts used. They are stimulant, antispasmodic, and emmenagogue; but seldom used in this country, except as a perfume for ointments, liniments, &c. The oil is stimulant and rubefacient, but is seldom used in medicine; its dose is from three to six drops.

ROUND-LEAVED PYROLA. *Pyrola Rotundifolia*. This is a perennial, evergreen, low shrub, common in various parts of the United States, bearing numerous white flowers in June. It is also known by the names of *Pear-leaf Wintergreen*, *Canker Lettuce*, *Shin-leaf*, &c. The herb is tonic, astringent, diuretic, and antispasmodic. It has been used in decoction, both externally and internally, in various cutaneous eruptions, in cancer, scrofula, leucorrhea, and some diseases of the womb. Internally, the decoction, or an extract, has been used with success in gravel, bleeding from the kidneys, ulceration of the bladder, epilepsy, and several nervous diseases. Externally, the decoction will be found an excellent local application, in sore throat, ulcerations of the mouth, indolent ulcers, ophthalmia, &c., and forms a soothing poultice for boils, carbuncles, and all painful tumors or swellings. One or ten fluidounces of the decoction, or from one to six grains of the extract, may be taken for a dose, and repeated three or four times daily.

RUE. *Ruta Graveolens*. This is a well-known perennial plant, possessing emmenagogue, ecboic, anthelmintic, and antispasmodic virtues. In large doses it is an acrid narcotic poison. It has been taken by pregnant women, and produced dangerous symptoms of derangement of the brain, and inflammation of the stomach and bowels, terminating in miscarriage. It has been successfully used in flatulent colic, hysterics, worms, epilepsy, and some nervous affections. A volatile oil is obtained from it, possessing stimulating, emmenagogue, and antispasmodic properties. Dose of the leaves, in powder, from ten to twenty grains; of the infusion, from one to four fluidounces; of the oil, from two to eight drops.

SAFFRON. *Crocus Sativus*. This perennial plant is a native of Asia Minor, and is cultivated in many parts of Europe; the stigmas are the parts

used. There are two kinds of Saffron, the *Hay Saffron*, which is the best; and the *Cake Saffron*, which is in flexible cakes. Saffron has a stupefying, aromatic odor, and a bitterish, balsamic, somewhat acrid taste; it is best when recent, as it loses its virtues by age; and should be kept in well-closed bottles. It possesses emmenagogue and diuretic properties, and has been used in warm infusion in suppressed menstruation, painful menstruation, suppression of the lochial flow, and in febrile diseases, especially of children. Dose of powdered Saffron, from ten to forty grains; of the tincture or syrup, one or two fluidrachms; of the infusion, from one to three fluidounces.

SAGE. *Salvia Officinalis*. This is a well-known perennial, shrubby plant, cultivated in gardens. The tops and leaves are astringent, feebly tonic, expectorant, and diaphoretic, with properties common to aromatics. The infusion is useful in flatulence connected with debility of the stomach, and to check night-sweats; used warm, it causes diaphoresis, and acts as an anthelmintic. It is much used as a gargle for inflammation and ulceration of the throat, relaxed uvula, &c., either alone, or combined with Alum, Honey, Vinegar, and Sumach berries. The infusion is also reputed to have the property of allaying strong sexual desires. When used internally it may be taken freely.

ST. JOHN'S WORT. *Hypericum Perforatum*. This is a well-known perennial plant, very common throughout the country. The tops and flowers possess astringent, sedative, and diuretic properties, and have been used in infusion, in suppression of the urine, chronic urinary affections, diarrhea, dysentery, worms, jaundice, hysterics, excessive menstruation, nervous irritability, &c. The dose of the infusion is one or two fluidounces, three or four times a day. Externally, they may be used in fomentation, or in the form of an ointment to dispel hard tumors, caked breasts, bruises, ecchymosis, swellings, &c. The saturated tincture may be used for the same purpose.

SARSAPARILLA. *Smilax Officinalis*. This drug is the root of a genus of climbing or trailing plants, inhabiting the tropical countries of the Western Continent. Many of them are worthless; and those are generally selected which leave a pungent acrid sensation in the mouth and throat, after being chewed for a few minutes. Sarsaparilla is commonly used in infusion or syrup, as an alterative in scrofula, syphilis, chronic rheumatism, skin diseases, and all other diseases in which an alterative is required, in the dose of three or four fluidounces, three times a day. The powder is occasionally given in doses of from twenty to thirty grains. The Honduras Sarsaparilla is considered the best.

SASSAFRAS. *Laurus Sassafras*. This tree is common to the United States. The bark of the root is a warm aromatic stimulant, alterative, diaphoretic, and diuretic; it is more commonly used with other alteratives, in scrofulous, syphilitic, rheumatic, and skin diseases. The pith of the extremities of the branches forms a mucilage which is useful as a local application in acute ophthalmia, and as a demulcent drink in disorders of the chest, bowels, kidneys, and bladder. Oil of Sassafras affords relief in painful menstruation, and is efficacious in diseases of the kidneys and bladder; the dose is from two to ten drops, on sugar, or in mucilage. It is a rubefacient when applied externally, and is thus employed in all painful swellings, sprains, bruises, rheumatism, &c.

SAVIN. *Juniperus Sabina*. This is an evergreen shrub common to Europe, and some parts of North America. The tops and leaves possess emmenagogue, diuretic, diaphoretic, and anthelmintic properties. The warm infusion has been used in suppressed menstruation, and for the removal of worms. It should never be given when much general or local inflammation exists, nor during pregnancy, as it is liable to produce abortion, violently affecting the stomach and bowels, and bringing life into extreme danger. Dose of the powdered leaves, from five to fifteen grains, three times a day; of the infusion from half a fluidounce to two fluidounces. Overdoses will produce inflammation of the stomach and bowels. The powdered leaves in the form of cerate, have been used as a stimulant to indolent ulcers, and to keep up a discharge from blistered surfaces; and, mixed with an equal weight of Verdigris, the powder has been used for destroying venereal warts. The *Oil of Savin* may be used in doses of from two to five drops, on sugar, as a substitute for the infusion.

SCAMMONY. *Convolvulus Scammonia*. This is a perennial plant, common to Turkey, Syria, Persia, &c.; the root, when cut across, yields a milky juice, which upon concreting, forms the gum-resin of commerce, Scammony. When pure it is light, in irregular pieces, and easily reduced to powder of a pale ash-grey color, with a greenish tint; its odor is peculiar, and its taste feeble, but followed by acidity. Alcohol is its best solvent. It is very liable to adulteration. Scammony is a powerful drastic cathartic, and is generally used in combination with other cathartics, which increases their action, while its own harshness is lessened. The dose is from five to fifteen grains. It should never be used when the stomach or bowels are inflamed.

SCULLCAP. *Scutellaria Lateriflora*. This is a perennial plant common to the United States, which possesses tonic, nervine, and antispasmodic properties. It is efficacious in convulsions, St. Vitus' dance, intermittent fever, tremors, neuralgia, and all nervous affections. In delirium tremens, the infusion drank freely will soon produce a calm sleep. The warm infusion may be drank freely, and will be found beneficial in all cases of nervous excitability, restlessness, or wakefulness, attending acute or chronic diseases, nervous headache, mental excitement during pregnancy, and among children whose health is impaired by teething.

Scutellarine, is the concentrated agent obtained from the plant, it is a green powder, and is obtained from the evaporated tincture by precipitation with Alum, and subsequent washings. It is a valuable tonic and nervine, and may be used in depression of the nervous and vital powers from any over-exciting cause, as well as in all those cases in which the herb is applicable. It may be used alone, or in combination with Caulophyllin, Cypripedin, or Alcoholic Extract of Black Cohosh. Its dose is from one to six grains, three or four times a day, or even more.

SENEKA. *Polygala Senega*. This is a perennial plant growing in various parts of the United States, and usually called *Seneca Snake Root*. The root is emetic and cathartic in large doses; in ordinary doses, it is a sialagogue, expectorant, diuretic, and emmenagogue. It is used as an expectorant in chronic catarrh, protracted pneumonia, croup, and asthma; as a local stimulant in relaxed sore throat; as a diaphoretic and diuretic in rheumatism; and as an emmenagogue in suppressed menstruation. It should not be used

in active inflammation. Dose of the powder, from ten to twenty grains; of the decoction, or syrup, from half a fluidounce to two fluidounces.

SENNA. *Cassia Acutifolia*. There are several species of the Cassia plant, which are supposed to yield the Senna of commerce; they grow in Egypt, Arabia, India, &c. The best kind is the Alexandria Senna. This drug is cathartic, and is used in febrile diseases, and whenever catharsis is desired. It does not depress the circulation, nor cool the system, but exerts a slightly stimulating influence. Its action is exerted chiefly on the small intestines, producing loose, brown, mucous evacuations. It enters into several cathartic preparations. Its nauseating taste, and tendency to occasion griping pains, may be obviated by the addition of ginger, cloves, cinnamon, sassafras, or other aromatics, as well as by sugar, manna, liquorice, &c. It should not be used in piles, falling of the bowel, inflammation of the stomach or bowels, &c. Dose of the powder from thirty to fifty grains; of the infusion, from two to four fluidounces; of the tincture, from half a fluidounce to two fluidounces.

SHEEP LAUREL. *Kalmia Angustifolia*. This shrub is also known by the name of *Narrow-leaf Laurel*, and is common to most parts of the United States, on hills and mountains. The *Big Ivy* or *Calico-bush*, *Kalmia Latifolia*, is also as common a shrub. The leaves of these plants when taken in large doses produce vertigo, dimness of sight, great depression of the action of the heart, cold extremities, and sometimes death. In medicinal doses, they are sedative, antisiphilitic, and astringent. Internally, a decoction or tincture is successfully used in syphilitic diseases, active hemorrhages, diarrhea, dysentery, febrile and inflammatory diseases, hypertrophy of the heart, ophthalmic neuralgia, and jaundice. The best form of administration is the saturated tincture, which may be given in doses of from ten to twenty drops, every two or three hours. It must be used with prudence, and when the above named symptoms appear, the dose must be diminished, or the use of the remedy be suspended for a few days. Dose of the powdered leaves, from five to twenty grains; of the decoction, a table-spoonful. Applied in the form of an ointment, the leaves have been efficient in scald-head, ring-worm, itch, and other diseases of the skin.

SHRUBBY TREFOIL. *Ptelea Trifoliata*. This shrub is common to the Western States, where it is known by the names of *Wingseed*, *Wafer-Ash*, &c. The bark of the root is the part used. It possesses tonic properties, and has been used in intermittent and remittent fevers, in convalescence after exhausting diseases, in debility connected with irritation of the stomach or bowels, in some affections of the lungs, and in erysipelas. The extract may be used in doses of from three to five grains, three or four times a day; the cold infusion, in table-spoonful doses, every one, two, or three hours. By the use of this medicine the appetite is improved, digestion is re-established and strengthened, and the stomach will be rendered able to endure proper diet.

Ptelein, is the name given to the Oleo-resinous principle of the crude bark, prepared by adding to a saturated tincture, twice its bulk of water, and distilling off the Alcohol. It forms a dark-brown, sirupy substance, having the peculiar odor of the bark, and an acrid, permanent, rather unpleasant taste, and is soluble in Ether, and Alcohol. It is a powerful, unirritating tonic, and may be used in all instances where the bark is indicated, in doses of one or two grains, repeated three or four times a day.

SKUNK CABBAGE. *Symplocarpus Foetidus*. This is a perennial plant growing in moist situations throughout various parts of the United States, and is frequently termed *Meadow Cabbage*. The root and the seeds are the parts used, the latter being more generally preferred; by age their virtues become much impaired. In large doses, Skunk Cabbage causes nausea, vomiting, headache, vertigo, and dimness of sight. In small doses, it is stimulant, expectorant, antispasmodic, and slightly narcotic, and has been efficacious in hooping-cough, asthma, nervous irritability, hysterics, epilepsy, convulsions attending pregnancy and parturition, chronic catarrh, and pulmonary and bronchial affections. Dose of the powdered root or seed, from ten to thirty grains, three times a day; of the infusion, one or two fluid-ounces; of a saturated tincture, one or two fluidrachms.

SLIPPERY ELM. *Ulmus Fulva*. This well-known substance is the inner bark of a tree common to this country, and which is sometimes called *Red Elm*. It possesses nutritive, expectorant, diuretic, demulcent and emollient properties. As a diuretic and demulcent it is valuable in all mucous inflammations of the lungs, stomach, bowels, bladder, or kidneys. It is used in the form of a mucilaginous drink, taken freely; coughs, strangury, &c., are benefited by its use; and it is useful in preventing summer-complaint of infants. Its external application has proved serviceable in many obstinate diseases of the skin; and, as a poultice, it is very valuable in burns, scalds, bruises, ulcers, local inflammations, suppurating tumors, fresh wounds, &c., also in the excruciating pains of the testicles which accompany the metastasis of mumps. In injection, the cold infusion is valuable in diarrhea, dysentery, tenesmus, piles, gonorrhea, gleet, &c. The powdered bark, sprinkled on the surface of the body, will prevent and heal excoriations, and chafings, and allay the heat and itching of erysipelas.

SMALL SPIKENARD. *Aralia Nudicaulis*. This is a perennial plant, growing in rocky woods and rich soils, in the Northern and Middle States. The root has a fragrant odor, and a sweetish, aromatic taste. It is alterative and gently stimulant, and has been used in decoction or syrup, as a substitute for Sarsaparilla, in syphilitic, rheumatic, and skin diseases; also in diseases of the lungs. Externally, a strong decoction of it has been efficacious as an application to shingles, and as a stimulating wash to old ulcers. Dose of the Decoction or Syrup, from two to four fluidounces, three times a day. The *Aralia Racemosa Spikenard*, or *Pettymorel*, possesses similar properties, and is much employed in diseases of the lungs.

SOAP. *Sapo*. Castile Soap, either the plain white, or mottled variety, is more commonly used in medicine. It possesses slightly laxative, antacid, and antilithic properties, and is usually given in combination with active cathartics, to lessen their irritating effects. Given alone, or in combination with Oils of Sassafras, Juniper, Spearmint, &c., it is very useful in many urinary diseases. It is also of service in acid stomach. Externally it is a stimulating discutient, and has been used by friction, or in the form of plaster, in sprains, bruises, and various tumors. A strong Solution of Soap forms a good injection in constipation, especially when arising from hardened feces in the rectum. Dose of Castile Soap, from five to thirty grains, in solution or pill-form.

SODIUM. Sodium is a soft, white, silver-like metal, which forms with Oxygen, a Protoxide, the alkali *Soda*, and Hydrate of Soda, or Caustic Soda.

The Protoxide is the most important oxide, as several salts are made with it, and which are used in medicine. Among them are the following:—

1. *Bicarbonate of Soda*. Sodæ Bicarbonas. Sometimes called *Supercarbonate of Soda*. It is a white powder, inodorous, and of a slightly alkaline taste, and is soluble in thirteen parts of water. It is antacid and antilithic, and possesses similar properties with the Bicarbonate of Potassa, though less diuretic, and is used in the same diseases as that salt. The dose is from five to sixty grains, dissolved in water. *Soda Powders* are prepared by placing in a blue paper, twenty-five grains of Tartaric Acid, and in a white paper, thirty grains of Bicarbonate of Soda. In using these, they are placed in separate portions of water, and dissolved. The solutions, to one of which some aromatic Syrup may be added, are mixed, and the liquid drank during the effervescence, which at once takes place. It forms a pleasant, cooling, and slightly laxative draught. The *Yeast*, or *Baking Powders* now in such common use, are composed of about two and a half parts of Cream of Tartar, and one part, each, of Corn Starch and Bicarbonate of Soda.

2. *Borate of Soda*. Sodæ Boras. This is the *Borax* of commerce, which exists naturally formed in several parts of the world, and is also extensively manufactured. It is in white, translucent, opaque, rhombic prisms, inodorous, of a sweetish, feebly alkaline taste, and is soluble in twelve parts of cold water. In doses of from thirty to forty grains, Borax is an excellent remedy in nephritic and calculous complaints, in which an excess of Uric Acid is found in the urine. It exerts an influence upon the womb, and has been successfully used in suppressed menstruation, painful menstruation, to produce abortion, facilitate labor, &c., either alone, or in combination with other agents. The dose of Borax is from ten to thirty grains, in solution. A solution of one drachm of Borax in five fluidounces of water, is a good wash for aphthous and inflammatory affections of the mouth and throat, mercurial salivation, &c. It may be sweetened with honey or sugar. Half a drachm of Borax dissolved in a fluidounce of distilled vinegar is an admirable wash for ringworm of the scalp. It is also used in several other affections of the skin.

3. *Chloride of Sodium*. Sodii Chloridum, also called *Muriate of Soda* and *Common Salt*. This is so well-known as to need no description. In small doses, it is tonic, alterative, and anthelmintic, and is useful in all chronic diseases characterized by paleness of the tongue with a white fur upon it. In teaspoonful doses, taken dry, it often checks bleeding of the lungs; and used moderately, it promotes digestion, removes strumous diseases, cures some form of dyspepsia, and gives tone to the digestive organs of weakly children, thereby correcting the disposition to generate worms. In spasms of an epileptic or apoplectic character, the effects of intemperance, Salt and Mustard, a teaspoonful or two of each, given in warm water, every ten or fifteen minutes, until free emesis is produced, will be found the most efficient emetic. In these cases, counter-irritation may be produced by bastinadoing the feet, and after the vomiting, the patient may drink freely of fresh milk. The dose of Salt, as an alterative and tonic, is from ten to sixty grains. A Solution of Salt is useful as a fomentation in bruises or sprains, as a tonic and excitant application in depraved conditions of the system, as a collyrium in some ophthalmic diseases, and is frequently used as a stimulating ingredient in injections.

4. *Sulphate of Soda*. Sodæ Sulphas. Also known as *Glauber's Salts*, is a cathartic in doses of from four to eight drachms, dissolved in eight or ten ounces of water; smaller doses are diuretic and laxative. A few drops of Sulphuric Acid, a little Lemon-juice, or some Cream of Tartar added to the Solution, will lessen its nauseous and bitter taste.

5. *Sulphite of Soda*. Sodæ Sulphis. This Salt forms transparent crystals, soluble in four parts of cold water. It has been used with success in cases of frothy vomiting, in which the microscopic fungi, *Sarcina Ventriculi* and *Torula Cerevisiæ*, were found. Its dose is sixty grains, three times a day. The *Hyposulphite* or *Bisulphite of Soda* is used for the same purpose, in doses of from ten to fifteen grains in half a fluidounce of infusion of Quassia, repeated three times a day. It has also been used as a wash in thrush, and some diseases of the skin.

6. *Tartrate of Potassa and Soda*. Sodæ et Potassæ Tartras. Also known as *Rochelle Salt*, is a mild, cooling purgative, suited to delicate and irritable stomachs, having a more agreeable taste than other purgatives among the neutral Salts. The dose is from two drachms to one ounce, in eight or ten parts of water. The gentle aperient known as *Seidlitz Powder*, is composed of thirty-five grains of Tartaric Acid in the white paper, and two drachms of Rochelle Salt, added to two scruples of Bicarbonate of Soda in the blue. Dissolve the contents of each paper, separately, in half a tumbler of water; mix the two solutions, and drink immediately during the effervescence.

SOLOMON'S SEAL. *Convallaria Multiflora*. This is a perennial plant, growing in various parts of the United States. The root is tonic, slightly astringent, and mucilaginous. It has an especial influence on irritation and chronic inflammation of mucous tissues, and, hence, has been found very valuable in chronic inflammation of the stomach and bowels, piles, chronic dysentery, laryngitis, &c. It is generally used in decoction or infusion, in doses of from one to four fluidounces, three or four times a day; a large dose proves nauseant and cathartic. It has also been efficacious in female debility, excessive menstruation, affections of the air-passages, &c. As a local application, the decoction will be found useful in erysipelatous inflammation, some diseases of the skin, and in the inflammation of the skin caused by the Poison Vine.

SOOT. *Fuligo Ligni*. Woodsoot is useful in acid conditions of the stomach, dyspepsia, hysterics, inflammation of mucous membranes, and as an injection in thread-worms. It may be used in powder, from five to twenty grains, three or four times a day; or in decoction, one or two fluidounces for a dose. An ointment of Soot is useful in burns, scalds, erysipelatous affections, scald-head, fistula, scrofulous ophthalmia, &c.

SPANISH FLIES. *Cantharis Vesicatoria*. Spanish Flies, or *Cantharides*, are natives of Europe; they are irritant and narcotic, in large doses, and stimulant and diuretic in medicinal doses. Large doses cause dangerous symptoms, as violent inflammation, strangury of the alimentary canal and urinary organs, irritation of the sexual organs, headache, delirium, convulsions and death; and there is no antidote to its alarming effects, upon which we can rely with any certainty. They are sometimes given internally, in chronic gonorrhea, gleet, leucorrhea, seminal weakness, paralysis of the bladder, &c. The dose is from half a grain to two grains of the powder, or from twenty to sixty drops of the tincture. Thirty drops of solution of Potassa, given every hour, is said to be an effectual remedy for strangury, caused by Cantharides. Externally, Spanish Flies are generally used to cause vesication or blistering of the skin, in various diseases. The *Cantharis Vittata*, or *Potatoe Fly*, of this country, is fully equal to the European insect.

SPEARMINT. *Mentha Viridis.* This is a well-known, perennial herb, possessing carminative, diuretic, and anti-spasmodic virtues. The warm infusion is useful in febrile diseases to cause perspiration; the cold infusion acts as an efficacious diuretic in heat of urine, pain in urinating, &c. A saturated tincture of the fresh herb in gin has been found serviceable in gonorrhea, strangury, gravel, suppressed urine, and as a local application to painful piles. The *Oil of Spearmint* is diuretic, stimulant, antispasmodic, and rubefacient, and is used externally in rheumatic and other pains. The decoction may be drank freely; dose of the oil, five or ten drops on sugar.

SPERMACETI. *Cetaceum.* This is a white, concrete, crystalline substance, inodorous, tasteless, partially soluble in ether, wholly so in fixed and volatile oils, and melted fats; it is obtained from the head of the spermaceti whale. It is used in domestic practice for the coughs, colds, and catarrhal affections of children, being generally combined with equal parts of loaf sugar. It also enters into several cerates and ointments.

SPIDER'S WEB. *Tela Araneæ.* The cobweb of the brown or blackish spider, found in barns, cellars, and other dark places, when given in doses of five or six grains, every two or three hours, in pill-form, is reputed efficacious in fever and ague, hysterics, periodical headache, asthma, hectic fever, St. Vitus dance, and various nervous and spasmodic affections. Also said to be useful in checking bleeding, when applied externally.

SPIRIT OF NITRIC ETHER. *Spiritus Ætheris Nitrici.* This liquid is more commonly known by the name of *Sweet Spirits of Nitre*; when long kept it becomes acid and unfit for medical use, but this may be obviated by keeping it on crystals of Bicarbonate of Potassa. It is stimulant, antispasmodic, diuretic, and diaphoretic; in large doses it is a narcotic poison, and the inhalation of its vapor has occasioned death. It has been used in dropsy, strangury, gonorrhea, and in febrile diseases, either alone, or combined with sedatives, or other diuretics. In gonorrhea, it is generally added to Copaiba, to lessen the acrimony of the urine. If taken when old, it will occasion pain in the stomach, and griping. The dose is from twenty drops to two fluidrachms, three or four times a day, in water.

SPIRIT VAPOR BATH. This bath exerts a most powerful, yet beneficial influence upon the whole system, aiding very materially our endeavors to remove disease. This highly valuable mode of producing activity of the cutaneous vessels, has long been practised in many sections of the country as a remedial agent, and was first introduced to the notice of the medical profession by myself, about twenty years ago, since which it is much in use among physicians. The advantages to be derived from this method of producing perspiration are very great, and it is not followed with any of those injurious consequences which often attend the internal administration of a sudorific.

It is to be given as follows:—The patient is undressed, ready for getting into bed, having removed the shirt and underclothing worn through the day, and put on a night-shirt, or other clothing, to be worn only while sweating, and during the night, if the bath is taken at bedtime. He is then seated on a high Windsor, or wooden-bottomed chair, or instead thereof, a bench or board may be placed on a common open-bottomed chair, care being taken that the bottom is so covered that the flame will not burn him. After seating himself, a large blanket or coverlid is thrown

around him from behind, covering the back part of his head and body, as well as the chair, and another must be passed around him in front, which last is to be pinned at the neck, loosely, so that he can raise it and cover his face, or remove it down from his face, from time to time, as occasion requires, during the operation of the bath. The blankets must reach down to the floor, and cover each other at the sides, so as to retain the vapor, and prevent it from passing off.

This having been done, a saucer or tin vessel, into which is put one or two table-spoonfuls of whiskey, brandy, spirits, alcohol, or any liquor that will burn, is then placed upon the floor, directly under the centre of the bottom of the chair, raising a part of the blanket from behind, to place it there; then light a piece of paper, apply the flame to the liquor, and as soon as it kindles, let down the part of the blanket which has been raised, and allow the liquor to burn until it is consumed, watching it from time to time, to see that the blankets are not burned; as soon as consumed, put more liquor into the saucer, about as much as before, and again set it on fire—being careful to put no liquor into the saucer while the flame exists, as there would be danger of burning the blanket, patient, and perhaps the house. Continue this until the patient sweats or perspires freely, which in the majority of cases, will be in five or ten minutes.

If, during the operation, the patient feels faint or thirsty, cold water must be sprinkled or dashed in his face, or he may drink one or two swallows of it—and in some cases the head may be bathed in cold water.

As soon as free perspiration is produced, wrap the blankets around him, place him in bed, and cover him up warm, giving him about a pint of either good store tea, ginger, or some herb tea to drink, as warm as he can take it. After two or three hours, remove the covering, piece by piece, at intervals of twenty or twenty-five minutes between each, that he may gradually cease perspiring.

There is no danger of taking cold after this Spirit vapor bath, if the patient uses ordinary precaution, and if his disease will allow, he can attend to his business the next day the same as usual. In fact, the whole is a very easy, safe, agreeable and beneficial operation, much more so than the mere reading of the above explanation would lead one to suppose.

This mode of producing perspiration is highly beneficial in severe colds, pleurisy, rheumatism, and all febrile and inflammatory attacks, diarrhea, dysentery, sluggishness of cutaneous vessels, &c. In acute diseases, it may be repeated once a day, if required; in chronic diseases, once or twice a week, or once a fortnight, according to indications, or the strength of the patient. Where it can be done, it is always preferable to bathe the patient with an alkaline wash, both before and after this vapor bath.

SPONGE. *Spongia*. Sponge, when burned, *Spongia Usta*, is said to be alterative and anti-scorfulous, and has been used in goitre, scrofulous tumors, and obstinate cutaneous eruptions, in the dose of from one to three drachms, mixed in honey or syrup. Since the discovery of Iodine, it is less used than formerly.

SQUILL. *Scilla Maritima*. This is a perennial plant, native of the Mediterranean countries. In large doses, it is a dangerous, irritant poison, proving fatal in the dose of twenty-four grains. Some persons cannot use it at all, unless combined with opium. In small doses, it causes nausea, and depression of the pulse, never stimulating the circulation. It has been used as an expectorant in bronchial and laryngeal diseases, in asthma,

catarrh, and diseases of the lungs, and as a diuretic in asthenic dropsy, generally in combination with *Digitalis*. It must not be given where there is much excitement or inflammation. The dose of the powder is from one to three grains, as a diuretic and expectorant, or one or two fluidrachms of the syrup.

STORAX. *Styrax Officinale*. Storax Tree is a native of the Mediterranean countries, the juice of which, when hardened, forms the common, brittle, reddish-brown Storax of the shops. *Liquid Storax* is a semi-fluid substance, whose source is not positively known. Both of these agents have a stimulating influence upon mucous tissues, and have been found useful, in doses of from ten to twenty grains, in cough, chronic catarrh, laryngitis, bronchitis, asthma, chronic gonorrhea, gleet, &c. Externally, made into an ointment, with equal parts of lard or tallow, it is efficacious in ringworm, scald-head, and other cutaneous diseases.

STRAMONIUM. *Datura Stramonium*. This is a well-known annual weed bearing the names of *Jamestown weed*, *Stink weed*, *Thorn apple*, &c. The leaves and seeds are the parts used; in large doses they are highly poisonous. In medicinal doses, they act as anodyne-antispasmodics, without producing constipation, and have been efficacious in mania, epilepsy, inflammation of the stomach and bowels, also in rheumatic, syphilitic, and neuralgic pains. Combined with Quinia, Stramonium is useful in fever and ague, headache, painful menstruation, &c. Externally, the fresh leaves, bruised, are valuable as a poultice in rheumatism, acute ophthalmia, swollen and painful breasts, painful ulcers, and inflammation of the stomach and bowels. The ointment is serviceable in many skin diseases. It should never be given internally in plethora, or where there is a determination to the head. Dose of the powdered leaves, from one to five grains; of the tincture of the seeds, not bruised, from five to thirty drops; of the alcoholic extract, from one-eighth of a grain to two grains.

SULPHUR. This well-known elementary, non-metallic substance, is a stimulant, laxative, diaphoretic, and alterative. It is considered a specific for the cure of itch. It has been used in piles, combined with Cream of Tartar, also in some diseases of the skin, chronic rheumatism, chronic hooping-cough, &c. Its dose is twenty or thirty grains, in molasses, two or three times a day. When used with Cream of Tartar, one part of the Sulphur may be added to four parts of the Tartar. Externally, Sulphur has been found very valuable in scrofulous, rheumatic, paralytic, syphilitic, and skin-diseases, either in form of ointment or bath. Care should be taken never to inhale the gas arising from heated Sulphur, as it may prove fatal. When Sulphur is sublimed, it is called *Flowers of Sulphur*, which, when washed to remove any acidity which may be present, is the best form for medicinal purposes.

SULPHURIC ACID. *Acidum Sulphuricum*. This acid when pure is a powerful caustic, acting powerfully on all organic substances, and rapidly decomposing them. When diluted with sufficient water, it has been used as a tonic in low typhoid conditions, and in convalescence from exhausting diseases; likewise as an astringent in diarrhea, night-sweats, and passive bleeding. It has also been applied externally to diseases of the skin, unhealthy ulcers, ulcerated throat and mouth, &c. One fluidounce of Sulphuric Acid may be gradually added to thirteen fluidounces of distilled water, of which

from ten to thirty drops may be given in a wineglassful of water, three times a day. The teeth may be preserved by sucking the mixture through a quill or glass tube. *See Elixir of Vitriol.*

SUMACH. *Rhus Glabrum.* This is a shrub common to various parts of the United States, the bark and berries of which are used in medicine. The bark is tonic, astringent, and antiseptic; the berries contain malic acid, and are refrigerant and diuretic. In decoction or syrup, the bark of the root has been found valuable in gonorrhea, diarrhea, dysentery, hectic fever, and scrofula. Combined with Elm bark, and White Pine bark, in decoction, it is said to have proved highly beneficial in gonorrhea. A decoction of the inner bark of the root is serviceable in the sore mouth resulting from mercurial salivation; it is also useful as an injection in falling of the bowel, and leucorrhea, and as a wash in some diseases of the skin. The powdered bark of the root, applied as a poultice to old ulcers, forms an excellent antiseptic. The berries may be used in infusion in febrile diseases, diarrhea, dysentery, diabetes, &c., and as a gargle in quinsy and ulcerations of the mouth and throat, and as a wash for ringworm, tetter, offensive ulcers, &c. The excrescences which form upon the leaves, are nearly equal in astringency to galls, and if pulverized and made into an ointment with lard, they afford a soothing application for piles. The gum which exudes from the bark on being punctured, during the summer, is beneficial in gonorrhea, gleet, and obstruction of the urine; it is best when formed into four-grain pills with equal parts of Canada Balsam and sufficient powdered Poke root to form a pill-mass,—one or two of these pills may be taken three times a day. Dose of the decoction of Sumach, one or two fluidounces, three or four times a day.

SUNFLOWER. *Helianthus Annuus.* The seeds, as well as the leaves of this well-known plant, possess expectorant and diuretic properties, and have been found very beneficial in cough, laryngitis, bronchitis, &c. A syrup has been made from the seeds, which is very valuable in many pulmonary affections, thus:—Bruise one pound of Sunflower seeds, add them to two and a half gallons of water, and boil slowly down to one gallon and a half; strain off the liquid, add six pounds of loaf sugar, and six pints of Holland Gin. The dose is from half a table-spoonful to two table-spoonfuls, four or five times a day. By expression, the seeds yield a fixed oil, upon which their virtues principally depend; in doses of ten or twenty drops three or four times a day, it will be found useful in all mucous inflammations; in treble this dose, it will greatly increase the flow of urine. The pith of the Sunflower stalk, in infusion, is diuretic, and may likewise be used with advantage as a wash in acute inflammation of the eyes.

SWAMP DOGWOOD. *Cornus Sericea.* This shrub is found in damp woods, and along the banks of rivers in various sections of the United States, and is also known by the names of *Rose-willow*, *Red-willow*, *Red Ozier*, &c. The bark is the part used; it is slightly tonic and stimulant, and astringent, and has been used for the same purposes as Dogwood bark. It has also been recommended in dropsy, dyspepsia, diarrhea, malignant fevers and to check the vomiting of pregnant women; also as an application to foul and ill-conditioned ulcers. Dose of the powdered bark, from twenty to sixty grains; of the infusion, from two to four fluidounces.

SWAMP MILKWEED. *Asclepias Incarnata.* This perennial plant grows in damp soils throughout the United States, bearing red flowers from

June to August. Upon being wounded the plant emits a milky juice. It is also known by the names, *White Indian Hemp*, *Flesh-colored Asclepias*, *Swamp Silkweed*, &c. The powdered root is anthelmintic in doses of ten or twenty grains, three times a day; or a decoction may be used in doses of from two to four fluidounces. It has also been recommended in catarrh, asthma, syphilis, and rheumatism.

SWEET FERN. *Comptonia Asplenifolia*. This shrub is common in sandy soils and stony woods, from New England to Virginia. The whole plant is aromatic, and possesses tonic, astringent, and alterative properties. It is efficacious in diarrhea, dysentery, summer-complaint of children, bleeding from the lungs, rheumatism, debility succeeding fevers, rickets, &c. Dose of the decoction, from one to four fluidounces, three or four times a day; externally, it is useful as an injection in Leucorrhea.

SWEET FLAG. *Acorus Calamus*. This well-known perennial plant is found in damp situations in most parts of the world, and is frequently called *Calamus*. The root is a stimulating tonic and aromatic, and is useful in flatulent colic, dyspepsia, atonic conditions of the stomach, and as an adjuvant to Quinia, and Peruvian bark, in fever and ague. In flatulent colic of infants, it is best combined with Magnesia. Dose of the root, from a scruple to a drachm; of the infusion, from two to four fluidounces.

SWEET GUM. *Liquidambar Styraciflua*. This tree is common to the Middle and Southern States; when wounded, a balsamic juice flows from its trunk, of the consistence of thin honey, yellowish-white, and of an agreeable, balsamic odor, and a warm, bitter, and acrid taste. It finally hardens into a soft, resinous, dark-colored mass, which is soluble in alcohol, oils, lard, or fats. Melted with equal parts of lard or tallow, it forms an ointment decidedly beneficial in piles, itch, ringworm of the scalp, and many other diseases of the skin, also in "fever sores," fistula in ano, &c. Internally it may be used in chronic catarrh, laryngitis, and other affections of the air-passages.

TAG ALDER. *Alnus Rubra*. This shrub is common in swamps and damp places in the Northern States. The bark is alterative, emetic, and astringent. The decoction or extract is useful in scrofula, secondary syphilis, and several forms of disease of the skin. The inner bark of the root is emetic, and a decoction of the cones is said to be useful in various hemorrhages. A powder, very efficacious in some chronic affections of the eye, is made by boring a hole about half an inch in diameter, lengthwise through a stout piece of a Tag Alder limb. Fill this with finely powdered salt, and close it at each end. Put it into hot ashes, and let it remain for three or four days, or until the piece of limb is almost all charred; then split it open, remove the salt, powder it finely, and keep it in a vial. To use it, blow some of the powder in the eye, through a quill.

TANNIC ACID OR TANNIN. *Acidum Tannicum*. This acid exists in most astringent plants, but is more commonly prepared from galls. It is a pure astringent, and has been advantageously employed in chronic diarrhea and dysentery, passive hemorrhages, diabetes, &c. Externally, its solution in water has been used as a wash in excoriations, fissure of the anus, sore nipples, ulcers of the mouth, severe salivation, &c.; and as an injection in gonorrhea, gleet, leucorrhea, piles, falling of the bowel, &c. It should not

be used in cases of obstinate constipation, nor during the presence of active inflammation. Dose of the powder, from half a grain to five grains.

TANSY. *Tanacetum Vulgare.* This is a well-known perennial herb, possessing tonic, emmenagogue, and diaphoretic properties. A warm infusion is diaphoretic and emmenagogue, and is of much service in suppressed menstruation, and in tardy labor-pains. A cold infusion is tonic, and has been efficacious in dyspepsia with troublesome flatulence, debility from long-continued disease, jaundice, worms, &c. Used as a fomentation, the herb is useful in swellings, tumors, local inflammations, and applied to the bowels in painful dysmenorrhea, and after-pains. Dose of the infusion from one to four fluidounces two or three times a day.

TAR. *Pix Liquida.* This well-known substance, has virtues similar to those of the Turpentine, and has been used in chronic coughs, chronic bronchial and laryngeal inflammation, and its vapor inhaled into the lungs, has been serviceable in cases of bronchial disease. Externally, in the form of ointment, it has proved an efficient remedy in scald-head, and some cases of scaly tetter, also, in foul and indolent ulcers. The Oil of Tar possesses similar properties, in doses of from three to six drops.

TARTARIC ACID. *Acidum Tartaricum.* This is a white, six-sided, crystallized solid, prepared from Cream of Tartar. It is soluble in water, and has an agreeably acid taste. It possesses refrigerant, antiseptic, and antiscorbutic properties. A solution of it may be used as a drink in febrile and inflammatory diseases, as a grateful acid refrigerant draught, forming an excellent substitute for lemonade.

THIMBLEWEED. *Rudbeckia Laciniata.* This is a perennial plant growing in various parts of the United States, in damp places. The whole herb is a valuable balsamic, diuretic, and tonic, and has proved useful in many diseases of the urinary organs; it has been highly recommended in strangury, Bright's disease, and wasting of the kidneys. The decoction may be used freely.

TOBACCO. *Nicotiana Tabacum.* This is an annual plant, the leaves of which are used. They possess acrid, narcotic, and poisonous properties, and are commonly used in the form of ointment in many skin diseases, croup, spasm of the glottis, obstinate ulcers, painful tumors, piles, &c.

TRAILING ARBUTUS. *Epigea Repens.* This is a woody plant common to the United States, and sometimes called *Gravel-weed*, *Mountain Pink*, &c. The leaves in infusion are diuretic and astringent, and have been very efficacious in all diseases of the urinary organs, gravel, diarrhea, and bowel complaints of children. It may be drunk freely. This is a very valuable medicinal plant.

TULIP TREE. *Liriodendron Tulipifera.* This is a large and magnificent tree, growing in nearly all parts of the United States. The bark of the root or trunk is the part used, that from the root being the best. It is of a yellowish color, and a bitter, aromatic taste. It should be collected during the winter. It possesses aromatic, stimulant, tonic, and in warm infusion, diaphoretic properties; and has proved beneficial in fever and ague, chronic rheumatism, chronic diseases of the stomach and bowels,

worms, &c. It is also called *Poplar*, *White Poplar*, &c. Dose of the powdered bark, from a scruple to two drachms; of the infusion, one or two fluidounces.

TURKEY CORN. *Corydalis Formosa*. This is a perennial plant, growing in rich soil in the Western and Southern States, being also known by the names of *Wild Turkey-pea*, *Stagger-weed*, &c. The tuberous root should be collected only while the plant is in flower, early in the spring. It possesses tonic, diuretic, and alterative properties, and is an excellent remedy in syphilis and scrofula. As a tonic, it may be used in all cases where these agents are indicated. Dose of the infusion, from one to four fluidounces, three or four times a day; of the saturated tincture, from half a fluidrachm to two fluidrachms.

TWIN LEAF. *Jeffersonia Diphylla*. This is a perennial plant, found in the Middle, and in many parts of the Western States. The root is diuretic, alterative, antispasmodic, and a stimulating diaphoretic. It has been successfully used in chronic rheumatism, secondary syphilis, syphilitic pains, spasms, cramps, and many nervous affections. As a gargle, it has been beneficial in diseases of the throat, ulcers about the throat, in scarlet fever, chronic inflammation of the eye, indolent ulcers, &c. Dose of the decoction, from two to four fluidounces, three times a day; of the tincture, one or two fluidrachms, three or four times a day.

UNICORN ROOT. *Aletris Farinosa*. This is a perennial plant growing in dry sandy soils and barrens, in most parts of the United States, and is variously known by the names *Star-grass*, *Crowcorn*, *Aque-root*, &c. The root is intensely bitter, and possesses, when dried, tonic properties. It has proved efficacious in dyspepsia, to improve the tone of the stomach, in flatulent colic, and hysterics. But its most valuable property consists in the influence it exerts upon the female generative organs, giving tone and energy to the uterus, and thus proving useful in tendencies to miscarriage. In chlorosis, suppressed menstruation, painful menstruation, engorged conditions of the womb, with falling of this organ, it is one of our best agents. Dose of the powdered root, from five to ten grains, three times a day; of the tincture, five to ten drops, in water.

Aletridin is the name given to the alcoholic extract. It possesses the properties of the root, and will be found very efficacious in all diseases in which the root is indicated, in doses of from half a grain to two grains, three times a day. In uterine diseases it may be combined with Senecin, Caulophyllin, Asclepidin, &c.

UVA URSI. *Arctostaphylos Uva Ursi*. This perennial plant, also known by the names of *Bearberry*, and *Upland Cranberry*, is an evergreen, common in the northern parts of Europe and America. The leaves are diuretic, tonic, and astringent, and have been used with advantage in chronic dysentery, diabetes, chronic affections of the kidneys, chronic gonorrhea, catarrh of the bladder, and in gravel with uric acid deposits. Dose of the powder, from ten to forty grains; of the decoction, two or three fluidounces.

VALERIAN. *Valeriana Officinalis*. This is a perennial European plant, the root of which consists of a short body, from which proceed numerous long, slender. fibers, of a yellowish or brownish color externally,

white internally, of a fetid odor, and a bitter and aromatic taste. These fibers are tonic, antispasmodic, and calmative, and have been successfully used in all cases of irregular nervous action, as in hysterics, restlessness and irritability of the nervous system in febrile diseases, morbid wakefulness, lowness of spirits, epilepsy, headache, &c. Its virtues depend upon a pale-greenish volatile oil, which may be substituted for the root. Dose of the infusion, one or two fluidounces three times a day; of the tincture, from half a fluidrachm to two fluidrachms; of the oil, five or six drops. In large doses it produces a sense of heaviness and dull pain in the head, with other effects indicating nervous disturbance.

VENICE TURPENTINE. This is a thick, viscid liquid, which exudes from the trunk of the *Abies Larix*, an European tree. It has a terebinthine odor and taste, and is soluble in alcohol. It possesses properties similar to those of the Oil of Turpentine, and the turpentine generally. Much of the Venice Turpentine sold in this country is a factitious article.

VERVAIN. *Verbena Hastata*. This is a perennial plant common to the United States. The root is emetic, expectorant, sudorific, and tonic. The warm infusion produces vomiting and sweating, and is useful in intermittent fevers, colds, obstructed menstruation, &c. The cold infusion forms a good tonic in some cases of debility, loss of appetite, during convalescence from acute diseases, and is reputed efficacious in scrofula, gravel, worms, &c. Equal parts of powdered Vervain, Senna, and White Pepper, mixed with white of egg, is said to form an excellent poultice in bruises, allaying the pain, and promoting the absorption of the effused blood. Dose of the powdered root, one or two scruples; of the infusion, from two to four ounces, three or four times a day, or oftener if it is desired to vomit.

VINEGAR. *Acetum*. Vinegar possesses diuretic, refrigerant, astringent, and tonic properties. It is useful in febrile and inflammatory complaints, especially when the tongue is coated dark or brown; also in typhus and scurvy, as an antiseptic. In urinary affections, attended with a white sediment, consisting mainly of phosphate of lime and ammoniaco-magnesian phosphate, it has been recommended. In dysentery and scarlet fever, Vinegar saturated with table Salt, has been very beneficial; it is also useful as an external application in external inflammations, bruises, sprains, swellings, &c. As a gargle, Vinegar is useful in putrid sore throat, ulceration of the throat, laryngitis, hoarseness, &c.; and forms a good application to several cutaneous diseases, in some cases of ophthalmia, nose-bleeding, &c., and as a cooling wash in headache during fevers or other attacks. The vapor of Vinegar inhaled into the lungs is useful in diseases of these organs, sore throat, dryness and irritation of the air-tubes in febrile diseases, and, diffused through the rooms of the sick, is both agreeable and wholesome to the patient and attendants.

Distilled Vinegar should always be used for medicinal purposes. Dose of Vinegar, internally, from one to four fluidrachms, in water.

VIRGINIA SNAKEROOT. *Aristolochia Serpentaria*. This perennial herb is common to the Middle and Southern States; the root consists of numerous long, slender, interlaced fibers, having a camphor-like, rather agreeable odor, and a bitterish, camphor-like taste. It possesses stimulant, tonic, and diaphoretic properties. A warm infusion causes sweating, and may be used in all forms of fever, in measles, small-pox, &c., where the

eruption does not readily make its appearance, and in suppressed or painful menstruation. A cold infusion is useful in dyspepsia, convalescence from fevers, &c. Dose of the powder, from ten to thirty grains; of the decoction, one or two fluidounces; of the tincture, one or two fluidrachms.

WATERMELON. *Cucurbita Citrullus*. The seeds of this well-known fruit, infused in water, form an excellent mucilaginous diuretic, which is valuable in strangury, heat of urine, inflammation of the stomach and bowels, gonorrhea, &c.; it may be drank freely. The red pulp of the ripe fruit, forms a pleasant refrigerant, diuretic, and nutrient for patients with fever, when there are no indications forbidding its use.

WATER PEPPER. *Polygonum Punctatum*. This well-known annual plant, also called *Smart-weed*, possesses stimulant, diuretic, emmenagogue, antiseptic, diaphoretic, and vesicant properties. The saturated tincture, in doses of a fluidrachm, two or three times a day, has been highly recommended in suppressed menstruation. Infused in cold water, the plant has been found serviceable in gravel, colds, and coughs. A fomentation applied externally, the plant being simmered in water and vinegar, is good in gangrene, foul and indolent ulcers, and piles. The infusion forms an excellent wash in chronic erysipelatous inflammations. The fresh weed bruised and applied to the skin will cause vesication. Dose of the cold infusion from two to four fluidounces; of the tincture, from two to four fluidrachms; of the extract, from four to six grains.

WAX. Wax is the product of the common Bee, *Apis Mellifica*. There are two kinds, *yellow wax*, Cera Flava, and *white wax*, Cera Alba. These are used in medicine chiefly as an ingredient of plasters, ointments, &c., though they have been recommended in diarrhea, dysentery, and inflammation of the alimentary mucous membrane, combined with Olive Oil, and the yolk of an Egg.

WHITE HELLEBORE. *Veratrum Album*. This is a perennial European plant, the rhizoma or root of which is used. It is a violent emetic and purgative, and in large doses, poisonous. It is seldom used internally; its most ordinary employment is in the form of ointment or decoction, as an application for the cure of itch, and several other diseases of the skin. Occasionally it has been used in gout, amaurosis, and in mental diseases.

WHITE OAK. *Quercus Alba*. The bark of this well-known tree is astringent, tonic, and antiseptic. It has been advantageously used in intermittent fever, chronic diarrhea, chronic mucous discharges, and passive hemorrhages; likewise in consumption, and diseases attended with great prostration, night-sweats, &c., in which a decoction of it may be combined with lime-water. In sickly, weakly children, and in severe diarrhea, especially when the result of fever, the decoction given internally, and used as a bath to the body and limbs, two or three times a day, will be found very efficacious. The decoction forms an excellent gargle for relaxed palate and sore throat,—a good stimulating wash for ulcers with spongy granulations,—and an astringent injection for leucorrhea, falling of the bowel, bleeding piles, &c. A poultice of the powdered bark has often proved of service in gangrene. Dose of the decoction, one or two fluidounces; of the extract, from five to twenty grains.

A coffee made from roasted acorns, has been highly recommended in the treatment of scrofula.

WHITE POND LILY. *Nymphaea Odorata*. This is a perennial plant growing in ponds and marshes in many parts of the United States. The root is astringent, demulcent, anodyne, and antiscrofulous. It has been efficacious in dysentery, diarrhea, gonorrhea, leucorrhea, and scrofula, and combined with Wild Cherry in bronchial and laryngeal affections. Externally, the leaves and roots have been used in the form of poultice to boils, tumors, scrofulous ulcers, and inflamed skin. An infusion, may be used as a gargle in ulcers of the mouth and throat, and as an injection in leucorrhea. Dose of the infusion, from two to four fluidounces.

WHITE TURPENTINE. This is the concrete juice, obtained by making incisions in the Long-leaved Pine, or Yellow-pitch Pine tree, *Pinus Palustris*. It is of a yellowish-white color, of a consistence depending somewhat on the degree of temperature, though it finally becomes dry and hard in consequence of the loss of essential oil. It is dissolved by alcohol or ether, and combines with fixed oils. White Turpentine possesses stimulant, diuretic, and anthelmintic properties, and in large doses it is laxative. It has been used in gonorrhea, gleet, leucorrhea, chronic diseases of the urinary passages, chronic catarrhal diseases, chronic rheumatism, piles, chronic inflammation or ulceration of the bowels, and in suppressed menstruation. Externally it is rubefacient and stimulant, and enters into various plasters and ointments. The dose is from a scruple to a drachm, in pill-form, or in emulsion with Gum Arabic, or yolk of egg, sugar, and water.

WHITE WEED. *Chrysanthemum Leucanthemum*. This is a perennial weed, growing in almost every part of the United States, and is very troublesome to farmers. It is also called *Ox-eye-Daisy*. It is tonic, diuretic, antispasmodic, and in large doses, emetic. The cold decoction, in doses of two or three fluidounces, three or four times a day, has been useful in whooping-cough, asthma, nervous excitability, night-sweats, and externally and internally in leucorrhea, as a tonic, it may be substituted for Chamomile flowers. Externally, it has been applied to wounds, ulcers, scald-head, and some diseases of the skin.

WHORTLEBERRY. *Vaccinium Frondosum*. This is a shrub, the fruit of which is large, dark-blue, and covered with a whitish, fine powder. There are several varieties of Whortleberry or Huckleberry, common to the Northern States. The fruit is diuretic, and is very useful, eaten alone, or with milk or sugar, in scurvy, dysentery, and derangements of the urinary organs. The berries and root, bruised and steeped in Gin, form an excellent diuretic, which has proved beneficial in dropsy and gravel. A decoction of the leaves, or bark of the root, is astringent, and may be used in diarrhea, or as a local application to ulcers, leucorrhea, and sore mouth and throat.

WILD CARROT. *Daucus Carota*. This is a biennial plant, common to Europe and the United States. The root and seeds are stimulant and diuretic, and have been used in infusion, in dropsy, chronic affections of the kidneys, gravel, and to relieve strangury produced by Cantharides. The seeds are also useful in flatulency. Externally, scraped or grated, the root forms an

excellent application as a poultice to gangrenous, cancerous, malignant, and indolent ulcers, relieving the pain, correcting the fœtor, lessening the discharge, and altering the morbid condition of the parts. Dose of the infusion, two or three fluidounces, three or four times a day.

WILD CHERRY. *Prunus Virginiana.* This tree is common to many parts of the United States. The bark of the root is the part used. It is a tonic and stimulant in its operation on the digestive organs, at the same time exerting a sedative influence on the circulatory and nervous systems. It has been used a tonic in convalescence from inflammatory attacks, in consumption, diseases of the air-vessels and organs in the chest, cough, scrofula, hectic fever, &c. The dose of the powdered bark, is one or two drachms; of the cold infusion, from one to three or four fluidounces, several times a day; and of the fluid extract, which is the best preparation for use, from half a fluidrachm to two fluidrachms.

WILD GINGER. *Asarum Canadense.* This is a perennial plant, common to nearly all parts of the United States, and is also known by the name of *Canada Snakeroot*, *Colt's foot*, &c. The root is an aromatic stimulant, tonic, diaphoretic, and expectorant, and has been used in colic, and other painful affections of the stomach and bowels where no inflammation exists, in cough, laryngitis, and chronic pulmonary affections. It is also used as a snuff in catarrh. Dose of the powder, half a drachm; of the Tincture, from half a fluidrachm to two fluidrachms.

WILD INDIGO. *Baptisia Tinctoria.* This is a perennial, small shrubby plant, found in most parts of the United States. The leaves and bark of the root, are the parts used. The root-bark is purgative, emetic, stimulant, astringent, and antiseptic. It is principally used on account of its antiseptic virtues. The decoction acts powerfully on the glandular and nervous systems, increasing all the glandular secretions, and arousing the liver to a normal action. It has been used with success in scarlet fever, typhus, and all cases where there is a tendency to putrescency, pneumonia, and acute rheumatism. Externally, it forms an excellent application to all ulcers, malignant sore-mouth, mercurial sore-mouth, scrofulous or syphilitic ophthalmia, gangrenous ulcers, &c. A fomentation of the leaves has discussed tumors of the breast. Dose of the Decoction, a table-spoonful every one, two, or four hours, as required. If it purge, produce nausea, or a disagreeable relaxation of the nervous system, lessen the dose, or omit its use entirely for a time.

WILD YAM. *Dioscorea Villosa.* This is a perennial vine, found in various parts of the United States, especially in the Southern. It is antispasmodic, and has been found almost a specific in bilious colic, promptly affording relief in the most violent cases, in doses of half a pint of the decoction, every half-hour or hour. It allays nausea, and spasms of the bowels, and is very useful in the nausea attending pregnancy. Dose of the decoction, two or three fluidounces, every thirty or forty minutes, until relief is obtained; of the tincture, from twenty drops to a fluidrachm.

Dioscorein is the name given to the concentrated principle, obtained from a saturated tincture of the root, by adding its volume of water to it, and evaporating or distilling off the Alcohol. It is of a light yellowish-brown color, with a feeble odor, and a disagreeable taste, with acidity. It has the virtues of the root in doses of one to four grains, repeated as often as the

urgency of the case requires; it may be taken in powder, or rubbed up with a little Brandy.

WILLOW. *Salix Alba*. This tree is common to the temperate parts of Europe and America. There are over one hundred species of Willow, common to these two countries. The bark is the part used; it is tonic and astringent, and has been used in intermittent fever, as an inferior substitute for Peruvian bark. It is a very eligible article in the treatment of chronic diarrhea and dysentery. The decoction is useful as an application to foul ulcers. Dose of the powdered bark, one drachm; of the decoction, one or two fluidounces, four or five times a day.

Salicin is the active principle of the Willow; it is a neutral substance, white, inodorous, and of a bitter taste. A small portion placed upon a glass slide, slightly fused and then immediately covered with thin glass, presents a most gorgeous array of colors under the polariscope. *Salicin* is tonic and antiperiodic, and may be used as a substitute for Quinia, to which, however, it is inferior, though it is less apt to offend the stomach. When Quinia is adulterated with *Salicin*, it may be known by adding a drop or two of Sulphuric Acid to it, which will turn the *Salicin* red. The dose is from two to twelve grains, three or four times a day.

WINTERGREEN. *Gaultheria Procumbens*. This is an evergreen plant, common to mountainous tracts, dry barrens, &c., throughout the United States. The leaves have a pleasant aromatic odor and taste, and possess stimulant, aromatic, and astringent properties. The infusion has been used in chronic diarrhea, as a diuretic in dysuria, as an emmenagogue, and in intermittent fever. The Oil, or its Essence, is used in flatulent colic, in intermittent fever, and to flavor various medical preparations. The Infusion may be drank freely. Dose of the Oil, from five to ten drops on sugar; of the Essence, from thirty to sixty drops in sweetened water.

WITCH HAZLE. *Hamamelis Virginica*. This shrub is common to most all parts of the United States. The leaves and bark are tonic, astringent, and sedative. A decoction has been used with advantage in diarrhea, dysentery, hemorrhage, excessive mucous discharges, &c.; and externally, as an application to piles, painful tumors, falling of the bowel, leucorrhea, gleet, sore mouth, and chronic ophthalmia. Dose of the decoction, from two to four fluidounces, three or four times a day.

WORMSEED. *Chenopodium Anthelminticum*. This is a perennial plant growing in waste places, in nearly all parts of the United States, and also known as *Jerusalem Oak*. The seeds yield volatile oil by distillation, which is anthelmintic, and much used for the removal of the round worm. It is more commonly used in doses of from four to eight drops, for a child, morning and evening, continuing its use thus for four or five days, and then giving a brisk cathartic. A strong infusion of the tops, is also said to expel worms.

WORMWOOD. *Artemisia Absinthium*. This is a well-known perennial, shrubby plant, the tops and leaves of which possess tonic and anthelmintic properties. The powder or cold infusion has been used to promote the appetite in dyspepsia, in gonorrhea, intermittent fever, suppressed menstruation, worms, &c. Dose of the powder, from ten to thirty grains; of the infusion, one or two fluidounces. Externally, the herb is useful as a fomentation in bruises, local inflammations, &c.

YARROW. *Achillea Millefolium.* This is a perennial herb, common to Europe and North America. It possesses tonic, astringent, and alterative properties, and has been used with advantage in intermittent fever, bleeding from the lungs, kidneys and stomach, excessive menstruation, incontinence of urine, diabetes, piles, flatulent colic, chronic dysentery, and some nervous affections. The infusion may be taken three or four times a day in wine-glassful doses; the volatile oil obtained from the plant, in doses of from ten to thirty drops.

YEAST. *Cerevisiæ Fermentum.* Yeast is stimulant, tonic, nutritious, antiseptic, and laxative. It may be used in typhoid fevers by mouth and injection, and in tympanitis by injection. In all malignant ulcerations of the throat and mouth, in diseases where there is a disposition to putridity, in scarlatina, low stages of fevers, with or without the addition of Olive Oil, which renders it more laxative, it will be found very beneficial. Given with Quinia it is very effectual in felons, carbuncles, and boils. The dose is half a fluidounce or a fluidounce, repeated every two or three hours. Externally, in combination with Elm bark and charcoal it forms an excellent emollient and antiseptic poultice in sloughing ulcers, stimulating the vessels, removing the tendency to gangrene, and correcting the fetor.

YELLOW DOCK. *Rumex Crispus.* This is a perennial plant growing in various parts of the United States, in dry fields, waste grounds, &c. The root is alterative, tonic, diuretic, and detergent, and is eminently useful in scorbutic, cutaneous, scrofulous, scirrhus, and syphilitic affections, leprosy, elephantiasis, &c. The fresh root bruised in lard or butter, forms an excellent ointment for scrofulous ulcers, scrofulous ophthalmia, itch, and a discutient for indolent glandular tumors. Dose of the decoction or syrup, from one to four fluidounces, three times a day.

YELLOW JESSAMINE. *Gelseminum Sempervirens.* This is a perennial, twining plant, common to the Southern States. The root is the part used. It possesses narcotic, relaxing, and febrifuge properties; quieting all nervous irritability or excitement, equalizing the circulation, promoting perspiration, and rectifying the various secretions, without causing nausea, vomiting, or purging. It may be used in all acute diseases, nervous headache, rheumatism, neuralgia, painful menstruation, spasmodic attacks, lock-jaw, and wherever relaxation of the system is indicated to lessen pain, irritability, inflammation, or spasm, &c. It should not be used in congestive fever, where there is muscular or nervous prostration, or relaxation of the system with exhaustion, nor when there is a tendency to fulness of the head. The dose of the tincture is from ten drops to a fluidrachm or more, according to its influence. Its effects are clouded vision, double sightedness, complete prostration, inability to open the eyes, but which gradually pass off in a few hours leaving the patient refreshed and relieved, or completely restored. And so soon as the heaviness or partial closing of the eyes is induced, no more of the remedy will be necessary in most cases, at least until these symptoms have passed away. Large and continued doses are dangerous, and have proved fatal. The antidotes to improper doses of it are Aqua Ammonia to the nose; stimulants, or Turk's Island salt, about the size of a large pea, internally; Quinia and Capsicum; and electro-magnetism. The tincture loses its strength by age.

YELLOW LADIES' SLIPPER. *Cypripedium Pubescens*. This is a perennial plant found in most parts of the United States, and also known by the names of *American Valerian*, *Umbel*, *Nerve Root*, &c. There are several varieties of the plant, all of which possess similar virtues. The root is tonic, stimulant, diaphoretic, and antispasmodic, and has been found beneficial in hysterics, St. Vitus' dance, nervous headache, and all cases of nervous irritability or excitability. Dose of the powder, from ten to thirty grains; of the infusion, from one to four fluidounces; of the tincture, from one to three fluidrachms; of the extract, from one to five grains, three or four times a day.

Cypripedin is the principle obtained from the root by adding the tincture to an equal volume of water, and distilling off the alcohol. It possesses the virtues of the root, in doses of from one to three grains.

YELLOW PARILLA. *Menispermum Canadense*. This is a perennial plant common in woods and near streams throughout the country. The root is tonic, laxative, alterative, and diuretic. It is much esteemed as a remedy in scrofulous, cutaneous, gouty, rheumatic, syphilitic, and mercurial diseases; also in dyspepsia, general debility, and chronic inflammation of the stomach and bowels. Dose of the decoction, from two to four fluidounces three times a day; of the extract, from two to four grains three or four times a day.

ZINC. The following are the preparations of this metal employed in medicine:—

1. *Chloride of Zinc.* *Zinci Chloridum*. This is a grayish-white, soft, deliquescent salt, soluble in water, ether, or alcohol. It is a powerful escharotic, and has been used as an application to cancers, malignant tumors, and obstinate ulcers; it destroys the diseased parts, and develops healthy action in the structures beneath. A solution of it has been used in gonorrhea; two or three grains being dissolved in one or two fluidounces of water, and injected into the vagina every four or five hours, or into the male urethra, extending only an inch or two within it. This is also useful in leucorrhea, purulent discharge from the womb, ulceration of the neck of the womb, &c. Internally, it is seldom used; and in overdoses it is a corrosive poison.

2. *Impure Carbonate of Zinc.* Also called *calamine*, and *lapis calaminaris*. This is a native salt found in Europe and this country, which when calcined and powdered, forms a flesh-colored powder, resembling earth. It is sprinkled on chafed or excoriated parts, to dry and heal them; and is sometimes made into a cerate or ointment for this purpose.

3. *Iodide of Zinc.* *Zinci Iodidum*. This is a white, needle-like salt, very apt to decompose spontaneously. Ten or twenty grains dissolved in a fluidounce of water, has been found useful as an application in enlargement of the tonsils, and in indolent scrofulous tumors. Or, it may be prepared for this purpose by placing a piece of clean Zinc in an inclined position over a glass jar, and sprinkling iodine upon it. In a little time, the iodide drops into the jar, as a deliquescent semifluid; this may be applied by means of a piece of sponge, or camel's hair pencil, repeating the application two or three times a week.

4. *Oxide of Zinc.* *Zinci Oxidum*. This is a white, or yellowish-white powder, without odor or taste, and insoluble in water or alcohol. It is applied to chafed and excoriated parts, either in powder, or in the form of ointment, and for which it answers an excellent purpose.

5. *Sulphate of Zinc.* Zinci Sulphas. This is also called *White Vitriol*. It is a colorless, four-sided, prismatic salt, soluble in water. It is sometimes used internally as an emetic, in cases of poisoning, to produce immediate vomiting; the dose is from ten to thirty grains. Its more common use is as an external application to old ulcers, gangrene or mortification, malignant ulcers, cancers, &c. A solution of it in water, from one to six grains to the fluidounce, is used as a wash in chronic ophthalmia, and as an injection in chronic gonorrhea, gleet, ulceration of the neck of the womb, and leucorrhea. The powder mixed with powdered Bloodroot and applied to polypus of the nose, has effected cures.

PHARMACY.

PHARMACY is that part of medical science which relates to the selection, preservation, and preparation of the various simple and compound remedies, which may be required in the management of disease. And this is so important a branch of medicine that it is generally confided to a class of men, termed Apothecaries or Druggists, who are taught all the necessary rules and principles for the proper preparation and combination of medicines. The beneficial effects of a remedy can be obtained only when it is skilfully exhibited, and the improper administration of even a valuable remedy may produce serious results; and again, a safe and salutary prescription, when improperly prepared, may prove as inefficacious or as injurious as in either of the preceding cases. Hence, the necessity for a separate department requiring intelligent, careful, and well-educated persons.

Medicines are either administered separately, or in combination, and the several forms in which they are generally prescribed, are—

- | | |
|------------------------------|----------------------------|
| 1. Balsams, | 13. Liniments, |
| 2. Cataplasms, or Poultices, | 14. Liquors, or Solutions, |
| 3. Caustics, | 15. Lotions, or Washes, |
| 4. Cerates, | 16. Medicated Waters, |
| 5. Confections, | 17. Medicated Wines, |
| 6. Decoctions, | 18. Mixtures, |
| 7. Essences, | 19. Ointments, |
| 8. Extracts, | 20. Pills, |
| 9. Fluid Extracts, | 21. Plasters, |
| 10. Fomentations, | 22. Powders, |
| 11. Infusions, | 23. Syrups, |
| 12. Injections, or Clysters, | 24. Tinctures, |
| 25. Vinegars. | |

The weights and measures used by the physician and apothecary in preparing medicines for use, are as follows:—

- | | | | |
|---------------------|------|-----|----------------|
| 20 grains (grs. xx) | make | one | scruple, (ʒj.) |
| 3 scruples (ʒiij) | make | one | drachm, (ʒj.) |
| 8 drachms (ʒviii) | make | one | ounce, (ʒj.) |
| 12 ounces (ʒxii) | make | one | pound, (lbj.) |

The characters or symbols in brackets represent the weights to which they are annexed, and are generally made use of by medical men; when it is intended to represent “a half” two letters “ss” are added, thus, for half a drachm, ʒss—for two and a half ounces, ʒijss, &c.

Fluids are measured as follows :—

60 minims (℥℥)	make	one	fluidrachm, (fʒj.)
8 fluidrachms (fʒviii)	make	one	fluidounce, (fʒj.)
16 fluidounces (fʒxvi)	make	one	pint, (oct.j.)
8 pints (oct.viii)	make	one	gallon, (cong.j.)

For the “pint”—*octarius*, O. or Oct. is used ; for the “gallon”—*congius*, Cong. is the abbreviation. *āā*, or *ana*, means “of each.” There are also certain approximate measurements used in domestic practice, but which are never employed by the properly instructed apothecary. Thus, drops (*guttæ*) are frequently named or prescribed ; in medicine, a drop (*gtt.*) means a minim, but when liquids are dropped from vessels they vary much in size according to the form of the mouth of the vessel, its size, and the consistency of the fluid, so that the drop of some liquids would be quite small, much less than a minim, while that of others would be much greater ; hence, drops, as commonly understood are a very indefinite measure. The other measures referred to, are nearly as indefinite on account of the variation in size of the vessels used. They are as follows :—

A spoonful, (*Cochleare*, or *Coch.*) equal to one fluidrachm.

A teaspoonful, (*Cochleare parvum*, or *Coch. par.*) equal to one fluidrachm.

A dessert-spoonful, (*Cochleare modicum*, or *Coch. mod.*) equal to three fluidrachms.

A table-spoonful, (*Cochleare magnum*, or *Coch. mag.*) equal to half a fluidounce.

A wineglassful, (*Cyathus vinarius*, or *Cyath. vin.*) equal to two fluidounces.

A teacupful, (*Cyathus theat*, or *Cyath. the.*) equal to six fluidounces.

Very powerful or active medicines, and especially those which exert injurious influences upon the system in large doses, should always be accurately weighed or measured, and when added to other agents, should be well and thoroughly mixed together.

Some attention should likewise be bestowed upon the doses of medicine. Medicines should always be given in the smallest possible quantity that will produce an influence upon the system. An emetic, a cathartic, and similar agents, require to be administered in quantities which will effect an almost immediate operation, as such is their object ; but other agents, as tonics, alteratives, diaphoretics, &c., should be given in small doses, and be repeated more or less frequently, the intervals between the doses being regulated according to the influence exerted by the medicine. Some persons will require larger doses of a particular agent than others, and frequently, even the same person will be differently influenced by the same remedy, on different occasions, owing to the condition of his system, and the attending circumstances at each time. The action of medicines may be modified not only by certain peculiarities or idiosyncrasies as they are termed, but also by the condition of the stomach, as well as of the nervous system ; climate, temperament, and the habit of taking medicines, so influence the nervous system, that a marked difference will be observed in the action of the same agent when given under these various conditions. The doses, as well as the action of a medicine, will also be found to vary when taken during health, and again when in a state of disease. The habit of taking stimulating food, or indulging in strong drink, will render a person less susceptible to the action of stimulating agents, narcotics, &c. By the exhibition of medicines in small doses, and at certain periods, we have them completely under our control, and can continue or suspend their use, without fear of any unpleasant after-consequences.

The doses named in this work, are the average ones, and it will be always better to commence with the smaller quantities, gradually increasing them until the desired influence is produced, being careful, however, never to obtain the full and immediate action of any agent, except cathartics, &c. There is no doubt, but that much mischief has been accomplished by giving those agents, whose use requires to be continued from day to day, in doses sufficiently large to produce and continue an active and powerful influence. The following table of medicinal doses, proportioned to the ages of persons will be found adapted to most cases, though, a few instances will be met with, in which children will require more than is here proportioned to them, as in the case of Castor Oil. Whatever may be the quantity of a medicine required as a dose for an adult, we will call it 1, and then younger persons will, according to their age, have the doses proportioned to them in fractions or parts of this 1, as described in the

TABLE OF DOSES.

Dose for an adult, over 21 years.	1
do. for a person between 14 and 21 years,	$\frac{2}{3}$
do. do. 7 and 14 do.	$\frac{1}{2}$
do. do. 4 and 7 do.	$\frac{1}{3}$
do. do. 4 years old,	$\frac{1}{4}$
do. do. 3 do.	$\frac{1}{6}$
do. do. 2 do.	$\frac{1}{8}$
do. do. 1 do.	1-12
do. do. 6 months old,	1-16

Females, weakly or delicate constitutions, and those of sanguine temperament, usually require less powerful doses than others. Where, from idiosyncrasy or otherwise, a medicine produces uncertain or unpleasant results, its use should be dispensed with, and some agent selected as a substitute, whose actions are similar but without the objectionable effects.

BALSAMS.

Strictly speaking, the term *Balsam* is confined to those agents which contain Cinnamic or Benzoic Acid, as Balsam of Tolu, Balsam of Peru, &c. I employ it here to distinguish those pharmaceutical compounds, whose consistency is similar to that of the liquid true balsams, and which have not been otherwise classified; more properly, they are mixtures.

COMPOUND BALSAM OF SULPHUR. Take of recently Precipitated Sulphur, sometimes called "Milk of Sulphur," two ounces; Linseed Oil one pound; mix, and boil together until all the Sulphur is dissolved, stirring it constantly. After the Sulphur is dissolved, add Oil of Amber two fluidounces, and Oil of Turpentine a sufficient quantity to make the mixture of a consistence resembling molasses.

In preparing this, if the Sulphur is not all dissolved, the mixture will be spoiled; if it be boiled too long, it will be apt to inflame, and be, consequently, useless. As the preparation, while being made, gives out a very disagreeable, irritating gas, it should be made in the open air, or in a fire-place with a tall chimney having a strong draught. While boiling, the mixture must be constantly stirred, and a piece of wet woollen carpet must be at hand, to throw over the vessel at once, should the mixture at any time inflame. As soon as the Sulphur is dissolved, remove from the fire, and add the other articles when it is nearly cold.

This preparation is very useful in diseases of the kidneys and bladder, especially when there is a great amount of phosphatic deposits and mucus in the alkaline urine; in uric acid and phosphatic gravel; in gonorrhea, gleet, fluor albus, &c. Among the Germans, it is highly prized, and is sold as a nostrum called *Harlem Oil*. The dose is from ten to thirty drops once a day, or once in two days; it may be taken in water, milk, mucilage, or, if not contra-indicated, in gin.

STYPTIC BALSAM. (*Warren's.*) Take of Sulphuric Acid, by weight, five drachms; Oil of Turpentine two fluidrachms; Alcohol two fluidrachms. These materials should be of the purest kind.

Place the Sulphuric Acid in a wedgewood mortar, and slowly add the Turpentine to it, stirring the mixture constantly with the pestle; then add the Alcohol in the same manner, and continue stirring until the fumes cease to arise, when place in a bottle well stopped with a glass stopper. If properly prepared, the mixture will be of a dark but clear red color, like dark blood; but if it be of a pale, dirty-red color, it will not be fit for use. After a few days, a pellicle forms upon the surface, which must be broken, and the liquid below it used.

This balsam has been used by its originator for nearly thirty years, and with uniform success. It acts both by its sedative power, in diminishing the force of the circulation, and by its astringent qualities, in contact with the bleeding vessels. He has used it in bleeding from the lungs, stomach, nose, and uterus, and in excessive menstruation; in which complaint it is not necessary to confine the patient to the room, suppress the voice, nor neglect business, nor is any auxiliary treatment required, except, perhaps, a purgative dose, where there is evidence that blood has been swallowed. Exercise in the open air is preferable to inaction. Into an ordinary tea-cup place a teaspoonful of brown sugar, add forty drops of the above Balsam to it, and thoroughly incorporate the two by rubbing them together; then slowly stir in water until the cup is nearly full, when it should be immediately swallowed. This dose may be repeated every hour for three or four hours, and its use should be discontinued as soon as fresh blood ceases to flow.

CATAPLASMS, OR POULTICES.

CATAPLASMS are designed for application to external parts, and are more commonly called *poultices*: they must be soft and moist, without sticking to the skin, from which they should be readily removed, when needed, and also without running over the surrounding parts. Poultices are generally applied warm, and renewed before becoming completely dry. They are intended for several actions, viz: to discuss tumors; to hasten suppuration; to lessen inflammation; to stimulate parts; to check gangrenous action, &c.

CARROT POULTICE. Take of the roots of garden Carrots two ounces; Flour, or Elm bark, half an ounce; boiling water a sufficient quantity to form a poultice. This is used in the same cases as the Charcoal poultice, also to tumors of a painful character.

CHARCOAL POULTICE. Add Bread one ounce, to hot water five fluidounces, and let them stand for five or ten minutes near a fire; then

add powdered Flaxseed five drachms, and powdered Charcoal two drachms, stirring these in so as to form a soft poultice. Or, this poultice may be made by adding to the Common Elm poultice a sufficient quantity of powdered Charcoal.

This poultice is used as an application to foul ulcers, gangrenous conditions, &c. ; it removes the offensive odor, and aids in restoring them to a healthy condition. It should be changed three or four times in the course of the day.

ELM POULTICE. Take of Elm bark, in powder, half an ounce ; hot water, a sufficient quantity to form a poultice of the proper consistence ; mix. This poultice is very valuable in all cases of burns, scalds, inflamed swellings and ulcers, painful tumors, abscesses, and wherever a soothing, emollient poultice is required.

LOBELIA POULTICE. Take of Lobelia and Elm bark, each, in powder, one ounce ; weak ley, hot, a sufficient quantity to form a poultice ; mix. This is an useful poultice in fistula, wounds, whitlow, boils, erysipelatous inflammations, stings by insects, and all external inflammations, swellings, &c., accompanied with pain.

POKE ROOT POULTICE. Take of fresh Poke root a sufficient quantity ; place it among hot ashes, and allow it to roast ; when it becomes quite soft, pound it, and form a poultice. This poultice may be applied to all tumors, for the purpose of discussing them, which it will do, unless they have advanced to the suppurative stage, when it will hasten their maturation, and during which its action is apt to be attended with more or less pain. It may be renewed every four hours.

CAUSTICS.

CAUSTICS are agents which decompose the several tissues of the body, whether these are in a healthy or diseased condition ; some act more powerfully than others. They are obtained from both the vegetable and mineral kingdoms, and are usually employed to destroy unhealthy growths, or to stimulate indolent parts to greater activity.

MILD VEGETABLE CAUSTIC. Dissolve Bicarbonate of Potassa four ounces, in water one pint ; strain the solution, and evaporate by a heat slightly above the boiling point, and when sufficiently evaporated, set the residue aside to cool ; if it be damp, it may be dried in a gently-heated, dry air.

This caustic is much used as an application in the treatment of fistulas, cancers, fungous growths, indolent or malignant ulcers, &c. Its action is principally expended on unhealthy tissues, arousing them to a state of health, without causing any great amount of inflammation. It has also been used, either in powder, or in solutions of various strengths, in chronic inflammatory conditions of the mucous tissues, as in diseases of the eye, nose, mouth, throat, vagina, urethra, &c. A weak solution has been found useful as an injection in leucorrhea, chronic inflammation of the rectum, &c.

STRONG VEGETABLE CAUSTIC. Place any quantity of strong Ley, prepared from the ashes of Hickory or Oak, in an iron vessel ; set

this over a fire, and evaporate the fluid to dryness. Remove the residuum from the vessel as quickly as possible, break it into small fragments, and place these immediately in a green glass bottle. As this preparation rapidly attracts moisture from the air, it should be kept well corked constantly, pulverising it for use only as required. It is a much more active and powerful agent than the preceding caustic, and is used for similar purposes, in cases where greater activity is desired.

CERATES.

THE term Cerate being derived from Cera, wax, indicates mixtures containing this substance as one of their ingredients; however, wax often enters into the composition of plasters and ointments. Cerates are usually composed of lard, tallow or oil, combined with wax, spermaceti, &c., with the addition of medicines to impart the desired action to them. They should be prepared from good, fresh articles, and with the use of a very moderate heat.

CAMPHOR ICE. Take Spermaceti one drachm, Almond Oil one fluid-ounce; melt these together, and add Camphor, in powder, one drachm.

This is a very useful article for chapped lips, hands and face, excoriations, chafings, &c. A somewhat similar preparation called *Camphor-ball* is made by melting together Spermaceti three drachms, White Wax four drachms, Almond Oil one fluidounce, and stirring in Camphor, in powder, three drachms.

CALAMINE CERATE. *Turner's Cerate.* Take of Lard half a pound, Yellow Wax an ounce and a half; melt these together and strain. When, upon cooling, the mixture commences to thicken, gradually add Prepared Calamine an ounce and a half, and stir constantly till cold. This cerate possesses a slight degree of astringency, and may be applied to burns, scalds, simple ulcers, chafing of the skin, excoriations, &c.

COLD CREAM. Take of Spermaceti ten drachms, White Wax one drachm, Oil of Almonds two fluidounces; melt these together by a very gentle heat, then add Glycerin four fluidrachms, in which Oil of Roses three drops have been placed, and stir constantly till cold. This is a cooling application, much used for chapped hands and lips, to abraded surfaces, &c.

CROTON OIL CERATE. Take of White Wax two ounces, Lard ten ounces; melt these together, and when nearly cool, add Croton Oil four ounces, stirring constantly until cold.

This is rubbed on external parts to produce rubefaction or pustulation, as a counter-irritant.

RESIN CERATE. Take of Resin, ten ounces, Lard sixteen ounces, Yellow Wax four ounces; melt these together, strain, and stir constantly until cold.

This is commonly known by the name of *Basilicon Ointment*, and forms a mild stimulating application to burns, blistered surfaces, ulcers, &c. A somewhat similar preparation is made by melting together Burgundy Pitch two ounces, Beeswax half an ounce, Lard or Sweet Oil half an ounce.

SIMPLE CERATE. Take of Lard two ounces, White Wax one ounce; melt together, and stir until cold.

Used for similar purposes as the Calamine Cerate.

CONFECTIONS OR CONSERVES.

COMPOUND CONFECTION OF SENNA. *Compound Electuary of Senna. Pile Electuary.* Take of Confection of Senna one ounce; Cream of Tartar half an ounce; Powdered Jalap three drachms; Nitre, and Flowers of Sulphur, each, two drachms; Extract of Butternut a sufficient quantity to form into a pill mass. Mix.

This is excellent for the blind and bleeding piles, and constipation. It should be formed into four grain pills, of which three or four may be taken every night and morning, or enough to gently open the bowels.

DECOCTIONS.

Decoctions are waters containing the active principle of medicines, obtained by boiling. The agents used are reduced to a coarse powder, or sliced, placed in clean, pure water, and boiled for a sufficient length of time to obtain their virtues; after which, while still hot, the fluid is strained. Some articles are injured by long boiling, and consequently should not be used in decoction, as those which contain volatile matters. The action of the air frequently impairs the activity of medicinal principles obtained by decoction, hence, whenever decoctions are made, they should be kept covered during the boiling process. The usual proportion of vegetable substances, in preparing decoctions, is one ounce of the plant or root used to a pint of water, of which the dose is from one to four ounces, depending on the activity of the medicine, or the therapeutical effect which is required.

ESSENCES.

Essences are tinctures of the essential oils of plants, and are prepared by dissolving two fluidounces of the oil in one pint of Alcohol; in this manner are prepared the essences of Anise, Caraway, Cinnamon, Peppermint, Spearmint, Sassafras, &c. The properties of essences are similar to those of the oils from which they are prepared, and their doses vary from ten drops to a teaspoonful in a little sweetened water.

EXTRACTS.

Extracts are soft substances, of pilular consistence, obtained from various agents, by the evaporation of their decoctions, tinctures, or juices, &c. Those obtained by the agency of water, are called *watery* or *aqueous extracts*; those by means of Alcohol, *Alcoholic extracts*; and those where both are used, *Hydro-Alcoholic extracts*. Much skill and knowledge is required to prepare reliable extracts, and the ordinary method of making a strong decoction and evaporating it down to the proper consistence, generally produces a substance either inert, or having the active principles materially impaired. The limits of this work will not permit an explanation of the

correct mode of preparing this class of agents, nor, indeed, is it necessary, as they can be procured with greater activity and at less cost, than any one not engaged in their manufacture could possibly effect. There are many manufacturers of extracts. I principally use those prepared by Tilden & Co., Lebanon, N. Y., W. S. Merrill & Co., and F. D. Hill, Cincinnati, O., and find them to be superior articles, upon which the physician may confidently rely. The properties of extracts are the same as the plants from which they are obtained and their doses are as follows:

EXTRACTS.	DOSES.
Belladonna, Alcoholic	$\frac{1}{8}$ grain to 1 grain.
Black Cohosh, "	1 " to 5 grains.
Conium, "	$\frac{1}{8}$ " to 3 "
Cypripedium, Hydro-Alcoholic	1 " to 5 "
Gentian, Aqueous	1 " to 10 "
Hyoseyamus, Alcoholic	$\frac{1}{4}$ " to 3 "
High Cranberry Bark, Hydro-Alcoholic	1 " to 10 "
Motherwort, Hydro-Alcoholic	2 " to 6 "
Nux Vomica, Alcoholic	1-20 " to 1 "
Poke, Alcoholic	$\frac{1}{2}$ " to 5 "
Rhatany, Aqueous	3 " to 15 "
Stramonium, Alcoholic	$\frac{1}{8}$ " to 1 "
Unicorn Root, do. (<i>aletridin</i>)	$\frac{1}{2}$ " to 3 "
Walnut Shells, Aqueous	2 " to 15 "
Water Pepper, do	2 " to 10 "

These doses may be repeated two or three times a day, according to their influence. *Inspissated Juices* are prepared by grinding the root or herb, expressing the juice, and allowing it to evaporate in a moderately warm apartment; the doses are similar to that of the extracts. Both extracts and inspissated juices, should always be kept well covered, or they will spoil.

FLUID EXTRACTS.

This is a form in which many valuable remedies are prepared. In some respects these preparations are preferable to extracts, tinctures, or decoctions, because they are not so liable to injury or decomposition, by great or long-continued heat, as is apt to be the case with extracts,—do not contain so much Alcohol as tinctures,—and possess more of the active properties of an agent, and in smaller doses than are required for decoctions or infusions. Considerable skill is demanded to produce a proper fluid extract, which cannot be well imparted by reading or writing, and those who offer the best articles of this kind to the profession, are they who have had some considerable experience in their manufacture. The fluid extracts manufactured by the firms named in the preceding article, and especially those of the Messrs. Tilden, are not surpassed by any in the country. Those who use fluid extracts, will do better by procuring the articles made by the above gentlemen, or other reliable manufacturers, than by individually attempting the preparation.

Fluid extracts possess the medicinal virtues of the plants from which they are obtained, and their doses are as follows:—

FLUID EXTRACTS.		DOSES.	
Black Cohosh,	$\frac{1}{2}$ fluidrachm	to	2 fluidrachms.
Buchu,	1 do	to	3 do
Chamomile,	$\frac{1}{2}$ do	to	1 do
Cubebs,	5 minims	to	30 minims.
Dogwood,	$\frac{1}{2}$ fluidrachm	to	2 fluidrachms.
Gentian,	$\frac{1}{2}$ do	to	1 do
Life root,	$\frac{1}{2}$ do	to	1 do
Lobelia,	10 minims	to	60 minims.
Prickly-Ash,	10 do	to	30 do
Rhubarb,	30 do	to	60 do
Sarsaparilla,	1 fluidrachm	to	2 fluidrachms.
Sculleap,	$\frac{1}{2}$ do	to	1 do
Stillingia,	2 minims	to	5 minims.
Trailing Arbutus,	1 fluidrachm	to	2 fluidrachms.
Water Pepper,	10 minims	to	60 minims.
Wild Cherry,	10 do	to	60 do

These doses may be repeated three or four times a day, according to the influence they exert. There are also one or two Compound Fluid Extracts, the formula for which will now be given.

FLUID EXTRACT OF RHUBARB AND POTASSA. *Fluid Neutralizing Extract.* Take of the best India Rhubarb Root two pounds, avoirdupois; Cassia or Cinnamon, and Golden Seal, each, one pound. Grind, or coarsely bruise the articles and mix them. Macerate them for twenty-four hours, or longer, in best fourth proof Brandy, one gallon; then express the tincture with strong pressure, and add to it, Oil of Peppermint one fluidrachm, previously dissolved in a little alcohol. Break up the cake or compressed residue, from the press, and place it in a displacement apparatus, and gradually add warm water, until the strength of the articles is exhausted. Evaporate this solution to four pints, and while the liquor is still hot, dissolve in it Bicarbonate of Potassa two pounds, and Refined Sugar three pounds. Continue the evaporation, if necessary, until, when added to the tincture first obtained, it will make one gallon and a half, and mix the two solutions together.

This is an improvement upon the Syrup of Rhubarb and Potassa, by W. S. Merrell, and is used for the same diseases as the Compound Powder of Rhubarb, and is a more eligible form of administration. The dose is one fluidrachm, which is equivalent to half a drachm of the powder.

FLUID EXTRACT OF SPIGELIA AND SENNA. Take of Pink root, in coarse powder, one pound; Senna, in coarse powder, six ounces; macerate them for two days in diluted Alcohol two pints; then put the mixture into a percolator, and add gradually of diluted Alcohol, until four pints have passed. Evaporate the tincture thus obtained, by means of a water bath, to sixteen fluidounces; add Carbonate of Potassa one ounce, by which the resinous sediment is dissolved, and then add Sugar one pound and a half, previously triturated with Oil of Caraway, and Oil of Anise, each, half a fluidrachm, effecting the solution of the sugar by a gentle heat. This is useful as a vermifuge, in doses of half a fluidounce for an adult; and from half a fluidrachm to a fluidrachm, for a child two years old.—*Am. Jour. of Pharm.*

FOMENTATIONS.

FOMENTATIONS are employed for the purpose of relaxing parts, relieving them from tension or spasmodic action, and lessening pain and inflammation. They are usually composed of bitter or anodyne herbs, which are steeped for a time in hot water, or hot vinegar and water, the herbs placed in a piece of muslin cloth, and applied over the affected part as warm as can be borne, care being taken that they be not applied so moist as to wet the under-clothing and bed of the patient. They should be renewed frequently; the more severe the pain or inflammation, the oftener should they be changed and renewed.

Fomentations are usually prepared of:—

1. Hops, Tansy, Wormwood, equal parts of each.
2. Hops, Lobelia, and Stramonium leaves, of each, equal parts; useful in severe inflammations.
3. Poppy Capsules.

INFUSIONS.

THERE are many medicinal articles whose virtues are injured or entirely destroyed by boiling, especially those of a volatile nature; consequently, such are, when required, made into infusions, either by cold or boiling water. The article is placed in the water and allowed to stand for a certain time, until its medicinal strength is extracted. The proportions are, usually, half an ounce, or an ounce of the root, herb, or bark, to a pint of water; the preparation is best made in a porcelain or glass vessel, instead of a metallic one, and should be kept covered. The doses of infusions vary from a table-spoonful to a teacupful, depending on the activity of the medicine, and the effect to be produced. In warm weather, infusions for the sick should be prepared daily; in cold weather, every other day, as they are not so liable to change and become acid or moldy in the latter seasons. There are a few Compound Infusions of a valuable character, which I will now describe.

COMPOUND INFUSION OF GERANIUM. Take of Geranium root, Black Cohosh root, Golden Seal root, Witch Hazel bark, each, in coarse powder, one ounce; boiling water four pints. Place the articles in the water, and allow them to stand in a close vessel, for about two hours, under the influence of a gentle heat, after which strain, and if required, add powdered Alum two drachms.

This astringent infusion is useful in chronic diarrhea and dysentery, in doses of one or two table-spoonfuls every two or three hours. It is also of service as an injection in gleet, prolapsus of the rectum, leucorrhea, and slight ulceration or excoriation of the neck of the womb, and as a wash or gargle in various ulcerations of the mouth and throat.

COMPOUND INFUSION OF PARSLEY. “Take of Parsley roots and seeds, and Subcarbonate of Iron, each, two ounces; Horse-radish root one ounce; Squill, Juniper berries, White Mustard seed, Mandrake root, and Queen of the Meadow root, each, half an ounce; coarsely slice or bruise these articles, and place them in boiling Cider three quarts; cover the vessel, which should be earthen, and expose it to a gentle heat for twenty-four hours. The cider should not be hard, nor too new, but sparkling and pleasantly tart; and after digestion by heat, that it may become

still further impregnated with the properties of the medicines, it should be allowed to remain upon the articles, not straining it off.

"This is useful in several varieties of dropsy, increasing the action of the kidneys, regulating the bowels, improving the digestive functions, and promoting activity of the absorbent vessels. The dose is one or two fluid-ounces three or four times a day."—*Am. Ec. Disp.*

COMPOUND INFUSION OF SAGE. Take of Hyssop leaves, and Sage, each, half an ounce, boiling water one pint. Add the herbs to the water, expose to a gentle heat about thirty minutes, and then add Borax, in powder, thirty grains.

This forms an excellent gargle or wash for ulcerations and inflamed conditions of the mouth and throat.

COMPOUND INFUSION OF TRAILING ARBUTUS. Take of Queen of the Meadow root, Dwarf Elder bark, Marshmallow root, Trailing Arbutus, each, coarsely bruised, half an ounce; place them in boiling water one pint, and good Holland Gin one pint, and steep by a gentle heat, in a closely covered vessel, for four hours; then strain, and sweeten well with Honey a sufficient quantity.

This is an useful diuretic compound in gravel, (but not the oxalate deposits,) suppression of urine, high-colored or scalding urine, urethral inflammation, and many other urinary disorders. In severe cases, a wine-glassful may be given every hour until relief is obtained, after which, every three or four hours. In some cases, a similar quantity of Wild Carrot root may be added to the above.

INJECTIONS, OR CLYSTERS.

THESE are composed of decoctions or infusions, &c., and are designed to be introduced into the rectum or lower bowels, by means of a syringe. They are more commonly exhibited for the purpose of aiding in the evacuation of the bowels; sometimes, however they are of a soothing character, at others stimulant, nutritive, relaxant, or anodyne, &c. Injections are a very useful class of remedies, and, indeed, it would be very difficult to treat some diseases without them. When the fluid is intended for the vagina, it is termed a vaginal injection. The following remarks on this subject are extracted from the author's "American Eclectic Dispensatory."

"Injections are a very valuable mode of treatment in many diseases; indeed some affections cannot be readily nor permanently cured without them. They are found especially beneficial in bilious colic, in bilious, typhus, yellow, and congestive forms of fever, in dysentery, diarrhea, &c. Among infants, life has often been preserved by their timely application; and the pains and dangers of the parturient woman, have frequently been very materially lessened by their use. And yet, notwithstanding their value and importance, there are hundreds of families, especially in country places, who do not supply themselves with the articles necessary for their administration, but who depend entirely upon the physician, or perhaps a neighbor, for the use of a syringe. This is a very reprehensible omission;"—"every individual, and more especially every family, is liable to sickness which may require the use of a syringe, and to depend upon the physician for its supply is certainly bad policy, for very few, especially among those practicing in the country, furnish themselves with a quantity

sufficient to meet the demands of the various families under their professional care ; beside, very few physicians carry an article of this kind, and in some diseases, the delay occasioned by sending for it, may be death to the patient. No doubt, an immense number of patients, and more particularly among those in the country, die yearly, solely from the want of an instrument with which to administer an injection. It is, therefore, a matter of duty with the practitioner, both to himself and to his patients, to strongly impress these facts upon those who patronize him professionally, and urge them by all means to make the necessary provision. A metallic syringe capable of holding a pint, and a smaller one of three or four fluid-ounces should be found in the possession of every family, as these can be adapted to meet any emergency requiring their use."

COMPOUND INJECTION, OR CLYSTER OF ASSAFETIDA. Take of Mandrake in powder, half an ounce, Quassia in coarse powder, an ounce, and make a strong decoction with water one pint; then strain and add Tincture of Assafetida six fluidrachms.

The injection is very useful to remove the thread or pin worms, which are liable to be lodged in the rectum. A gill may be injected into the rectum of a child two or three years old, and repeated as often as required.

COMPOUND INJECTION, OR CLYSTER OF LOBELIA. To water one fluidounce, add Compound Tincture of Lobelia and Capsicum one fluidrachm.

This is a valuable antispasmodic injection, which may be used in all cases of spasmodic action, as epilepsy, convulsions, lockjaw, and in a rigid state of the os uteri. An infant laboring under convulsions, may have half the above administered as an injection ; an adult, may use four or six times the quantity named in the formula. Half a fluidounce of the Compound Tincture to a fluidounce of water, forms a good injection for adults.

COMPOUND INJECTION, OR CLYSTER OF PRICKLY-ASH. Take of Tincture of Prickly-Ash berries one fluidounce, Tincture of Opium two and a half fluidrachms, water four fluidounces ; mix.

This injection is useful in diarrhea, Asiatic cholera, summer-complaint of children, and as a stimulant in typhoid conditions of fever. It is also very efficacious in tympanitis. The quantity used for an adult should be one-eighth of the formula, which may be repeated as often as required, always desiring the patient to retain it in the bowels as long as possible. In bowel complaints, it should be administered immediately after an operation.

COMPOUND INJECTION, OR CLYSTER OF SENNA. Take of Senna and Boneset, each, two ounces, boiling water one pint; digest the herbs in the water by a gentle heat for ten or fifteen minutes ; then strain, and add molasses, two fluidounces, Salt, Lobelia Seed, Capsicum, of each in powder, one drachm, powdered Bayberry bark, one ounce.

This injection should be administered as hot as the patient can bear ; it is very useful in bilious colic, in which it may be repeated every ten or fifteen minutes, until a free evacuation has been procured. In connection with the injection, use the means named under *Bilious Colic*.

LINIMENTS.

LINIMENTS are liquid mixtures of oils, tinctures, solutions and various other substances, designed for external application to painful or torpid parts, swellings, rheumatism, &c.; they may be rubefacient, stimulant, or anodyne and sedative, and are usually applied upon the parts by gentle rubbing with the hand, or flannel.

ACONITE LINIMENT. Take of Aconite Root, in powder, four ounces, and place it in Alcohol half a pint; macerate for twenty-four hours, then pack it in a small displacer, and add Alcohol gradually, until a pint of the tincture has passed. Distil off twelve fluidounces, and evaporate the residue until it measures twelve fluidrachms. To this add Alcohol and Glycerin, of each, two fluidrachms.

This Liniment is useful in gout, rheumatism, neuralgia, &c. It is used thus:—Cut a piece of lint of the required size, and saturate it with the Liniment; when applied to the surface, a piece of oiled silk should be kept over it. It must be used with great care, never applying it to an abraded surface, nor in contact with the nostrils, lips, or eyes.—W. PROCTER, JR.

CAMPHOR LINIMENT. Take of Camphor six drachms; dissolve it in Chloroform one fluidrachm, and add Olive Oil one fluidounce.

This is an anodyne liniment, useful in rheumatism, neuralgia, sprains, &c.

COMMON LINIMENT. Take of solution of Ammonia, (*Aqua Ammonia*,) two fluidounces, Olive Oil four fluidounces; mix together.

This is a rubefacient, useful in inflammations of the glands, or parts around the throat, and in pains, colds, &c., of children; when too strong, it may be weakened by the addition of more Olive Oil.

COMPOUND CAPSICUM LINIMENT. RHEUMATIC LINIMENT. Take of Tincture of Capsicum one and a half fluidounces; Tincture of Opium and Aqua Ammonia, each, one and a half fluidrachms; Oil of Origanum one fluidrachm; Oil of Cinnamon and Tincture of Camphor, each, half a fluidrachm; mix.

This Liniment is used in rheumatic, pleuritic, neuralgic, and other pains.

COMPOUND LINIMENT OF OIL OF AMBER. Mix together Oil of Stillingia and Rectified Oil of Amber, of each, four fluidrachms, Oil of Lobelia one and a half fluidrachms, and Olive Oil one fluidounce.

This is a stimulant and antispasmodic liniment, useful in asthma, rheumatism, spasmodic affections, hooping-cough, &c., it is usually applied along the whole spinal column, repeating the application two or three times a day, also rubbed over the affected parts. It must not be used in too large quantity at a time.

COMPOUND LINIMENT OF STILLINGIA. Mix together Oil of Stillingia four fluidrachms, Oil of Cajeput two fluidrachms, Oil of Lobelia one fluidrachm, and Alcohol, one fluidounce.

This Liniment possesses properties similar to the preceding, and is used in the same diseases. In asthma, the neck, chest, and spinal column must be bathed with it; and frequently, as with the above liniment, the patient will experience a taste of the articles, when thus used externally.

CROTON OIL LINIMENT. Mix together Croton Oil four fluidrachms, with Oil of Turpentine three and a half fluidounces.

This is a rubefacient application, and which if used continuously for several days, will cause pustulation. Fifteen or twenty drops may be applied at a time, repeating it two or three times a day, according to the effect desired.

OPODELDOC. Take of common white Soap two ounces, Camphor one ounce, Oil of Rosemary three fluidrachms, Oil of Origanum two fluidrachms, strong Aqua Ammonia one fluidounce, Alcohol one pint and a half. Digest the Soap with the Alcohol, by means of a sand bath, till it is dissolved; then add the Camphor, Oils, and Ammonia, and when they are dissolved, pour the liquor into broad-mouthed bottles. This Liniment, when cold, has the consistence of a soft ointment.

It is used as an application in sprains, rheumatic pains, &c. It is also called *Camphorated Soap Liniment*.

WHITE LINIMENT. To the yolk of one egg, slowly, add Rose Water two and a half fluidounces, rubbing them together in a mortar; then add Oil of Turpentine, three fluidounces, Oil of Lemon half a fluidrachm. Pour the whole into a pint bottle, and agitate to mix thoroughly; then add Pyroligneous Acid, (or in its absence, Acetic Acid,) one fluidounce; shake quickly and briskly. Keep it well corked.

This liniment is used in asthma and inflammation of the lungs, rubbing it on the throat and chest with a sponge or cloth, from the throat to the pit of the stomach; it is also useful wherever a counter-irritant is required.

LIQUORS, OR SOLUTIONS.

SOLUTION OF IODIDE OF IRON. Mix, in a porcelain or glass vessel, Iodine one ounce with Distilled Water two and a half fluidounces, and gradually add Iron Filings half an ounce, stirring constantly. Heat the mixture gently until it acquires a greenish-tint; then filter the solution into a glass bottle containing Powdered Sugar six ounces, and pass afterward through the filter Distilled Water, a sufficient quantity to make altogether ten fluidounces. Keep in closely stopped bottles. This is an alterative chalybeate tonic, and diuretic, and has been used in scrofula, chlorosis, suppressed menstruation, leucorrhea, dyspepsia, and many other forms of chronic disease attended with a strumous or anemic habit of body. The dose is from ten to forty drops, three times a day, well diluted with water. After taking each dose wash the mouth carefully, that the teeth may not be injured by it.

COMPOUND SOLUTION OF IODINE. Take of Iodine half an ounce, Iodide of Potassium one ounce, Rose Water, or Distilled Water, a pint. Dissolve the Iodine and the Iodide of the Potassium in the water.

This solution should be kept in a well-stopped bottle, and in a dark place. It is a stimulant, alterative, diuretic, and emmenagogue, and is useful in all syphilitic, rheumatic, and scrofulous diseases, and in suppressed menstruation, and other functional derangements of the womb. The dose is five drops, three times a day, in half a fluidounce of water, gradually increasing it to fifteen or twenty drops.

SOLUTION OF POTASSA. *Liquor Potassa.* Dissolve Carbonate of Potassa half a pound in boiling Distilled Water two pints. On Lime four

ounces, pour a little boiling Distilled Water taken from another measure of two pints, and when it is slaked add the remainder. Mix the hot liquors, and boil for ten minutes, constantly stirring; then set the mixture aside, in a covered vessel, until it becomes clear; pour the clear liquor into green glass bottles, and keep them well stopped. For properties see Solution of Potassa, page 685.

LOTIONS, OR WASHES.

THESE comprise all compounds used as external washes, where remedial agents are dissolved in water or spirits, and which do not strictly class with infusions, liniments, mixtures, or tinctures.

ALKALINE WASH. Take of Sal Soda (*Carbonate of Soda*), or Sal-eratus (*Bicarbonate of Potassa*) one drachm; warm rain water one pint. Dissolve. Or, make a weak ley of hot water and hard wood ashes.

This is used as a wash to bathe the surface of the body and limbs, in all fevers and acute diseases; also, in many chronic affections. After bathing, the body should be well dried, with considerable friction. When it is also required to stimulate the skin, some alcohol or whisky may be added.

BORAX LOTION. *Cooling Wash.* Take of Powdered Borax two drachms; Rose Water half a pint; dissolve. This is useful in inflammation of the eyes, and inflammation or ulceration of the nipples, and of the mouth and fauces. Rain Water may be substituted for the Rose Water.

BORAX LOTION WITH MORPHIA. Take of powdered Borax two drachms, Sulphate of Morphia three grains, Decoction of Golden Seal four fluidounces. Dissolve the powders in the decoction.

This is useful in itching of the genital parts during pregnancy, or at other times; also in the same diseases as the preceding wash.

COMPOUND LOTION OF GOLDEN SEAL. To a strong decoction of Green Tea, and Golden Seal, each, half a pint, add of Sulphate of Zinc, Gunpowder, and dried Sulphate of Iron, each, one drachm. Dissolve the powders in the mixed decoctions, and after decomposition has ceased, and the precipitate has subsided, pour off the clear liquid.

This lotion is used in chronic diseases of the eye; it may be applied three or four times a day.

COMPOUND MYRRH LOTION. *Stimulating Eyewater.* Take of powdered Myrrh two drachms; Sulphate of Zinc two scruples; Acetate of Lead one drachm; Boiling water one pint. Add the powders to the water, let them macerate for eight or ten days, and filter. In the preparation of this lotion, a decomposition necessarily ensues.

This is used principally in chronic inflammation of the eyes; it may be applied two, three, or four times daily, and if its action be too severe, it may be weakened by the addition of water.

COMPOUND LOTION OF ZINC. Take of Sulphate of Zinc, Rock Alum, each, ten grains, water one pint; dissolve and filter.

This is a stimulating wash, used for films, specks, opacities, &c., of the eyes; also to indolent ulcers, and chronic inflammations of mucous surfaces.

COMPOUND SODA LOTION. Take of Rock Salt three ounces, Sulphate of Zinc one ounce, Red Oxide of Iron (*Crocus Martis*) eight grains, rain Water one pint. Dissolve these together, and when the precipitate has subsided, pour off the clear liquid.

This is used in the same cases as the Compound Myrrh Lotion.

COOLING LOTION. *Saline Wash.* Take of fine Salt half an ounce Vinegar, Soft Water, each, four fluidounces; Whisky, or Brandy, two fluidounces; mix together, and dissolve the salt.

This is used as a cooling wash in headaches, inflammation of the brain dropsy of the head, &c. It is sometimes used tepid.

EVAPORATING LOTION. *Compound Ethereal Lotion.* Take of Sulphuric Ether, Rectified Alcohol, Solution of Acetate of Ammonia, each, six fluidrachms, Rose Water, fourteen fluidrachms; mix.

This lotion is *refrigerant*, if allowed to evaporate by free exposure; *stimulant*, if evaporation is prevented, by covering the part to which it is applied with the hand or a cloth.

LOTION OF GOLDEN SEAL AND ACONITE. To a concentrated decoction of Golden Seal one fluidounce, add Tincture of Aconite half a fluidrachm; mix.

This is useful in many affections of the eye, and in chronic inflammations of mucous surfaces; a drop or two may be placed on the eye-ball two or three times a day. In some cases the Tincture of Aconite may be omitted, and Tincture of Black Cohosh, half a fluidrachm, or a fluidrachm, be advantageously substituted.

MEDICATED WATERS.

THESE consist of waters which have been impregnated with some medicinal agent. Medicated waters when prepared from volatile oils, are usually prepared by triturating a certain proportion of the oil with Carbonate of Magnesia one drachm, and then gradually adding, while continuing the trituration, Distilled water two pints; finally filtering through paper. The proportions of oil to the above materials are as follows:—

Bitter Almond Water . . . of oil of Bitter Almonds, sixteen minims.

Cinnamon Water of oil of Cinnamon, half a fluidrachm.

Peppermint Water of oil of Peppermint, half a fluidrachm.

Spearmint Water of oil of Spearmint, half a fluidrachm.

Pennyroyal Water of oil of Pennyroyal, half a fluidrachm.

The properties of these medicated waters are similar to those of the oils from which they are prepared; and the doses vary from half a fluidounce to two fluidounces, three or four times a day. Bitter Almond Water, however, is an exception, its dose is one or two fluidrachms.

CAMPHOR WATER. Take of Camphor one drachm, triturate it with Alcohol twenty minims, then with Carbonate of Magnesia two drachms, and lastly with Distilled Water, added gradually, one pint; then filter through paper.

This is useful in the low stages of fevers, and typhoid states of the system, to relieve after-pains, and in all cases where Camphor is indicated. One fluidounce contains about three grains of Camphor. The dose is from half a fluidounce to a fluidounce every hour or two.

MEDICATED WINES.

MEDICATED Wines are the tinctures of medicinal agents in wine, either pure or diluted; the common name of *Wine Bitters* has heretofore been applied to them. As they are much more liable to decomposition than syrups or tinctures, they should be made only in small quantities at a time.

COMPOUND WINE OF GOLDEN SEAL. *Wine Bitters.* Take of Golden Seal root, Tulip Tree bark, Bitter root, each, bruised, one drachm; Prickly-Ash berries, Sassafras bark, Capsicum, each, half a drachm; Sherry Wine, three pints. Macerate for fourteen days, with occasional agitation; then express and filter.

This is useful in dyspepsia, and in all cases where tonics are required. The dose is from half a fluidounce to two fluidounces, three times a day.

COMPOUND WINE OF COMFREY. *Restorative Wine Bitters.* Take of Comfrey, Solomon's Seal, Helonias, each, bruised, one ounce; Chamomile flowers, Colombo, Gentian, Cardamom seeds, Sassafras bark, each, bruised, half an ounce. Let these articles macerate for twenty-four hours, in sufficient boiling water to cover them, keeping them closely covered; then add Sherry Wine four pints. Macerate for fourteen days, express and strain.

This is a valuable tonic, especially beneficial in leucorrhœa, and all diseases peculiar to females. The dose is from half a fluidounce to two fluidounces, three or four times a day.

MIXTURES.

By mixtures, is meant all those preparations containing substances of a saccharine, oily, albuminous, or mucilaginous nature, which cannot properly be classed with infusions, decoctions, syrups, tinctures, &c.; also compounds in which insoluble substances are suspended in watery preparations by the intervention of some viscid matter.

CAMPHOR MIXTURE. Take of Camphor water two fluidounces, Nitrous Acid fifteen minims, Tincture of Opium from twenty to forty drops; mix.

This is very useful in diarrhea, dysentery, and cholera morbus. The dose is a table-spoonful every two or three hours.

COMPOUND CAJEPUT MIXTURE. *Hunn's Drops.* Dissolve Oil of Cajeput, Oil of Cloves, Oil of Peppermint, Oil of Anise, each, one fluidrachm, in rectified Alcohol four fluidrachms.

This is useful in colic, cramp of the stomach, or elsewhere, flatulence, pains in the stomach or bowels, painful diarrhea, cholera morbus, Asiatic Cholera, and in all cases where a stimulant and anti-spasmodic is required. The dose is from twenty drops to a fluidrachm, in some sweetened water. in simple syrup, or mucilage of slippery Elm.

COMPOUND COPAIBA MIXTURE. *Diuretic Drops.* Take of Sweet Spirits of Nitre one fluidounce; Copaiba, Canada Balsam, each, half a fluidounce; Oil of Juniper, Oil of Cubebs, Oil of Anise, each, two fluidrachms; mix.

This is useful in gonorrhœa, gleet, scalding of urine, and kidney affec-

tions. The dose is a teaspoonful, three times a day, in some tea or mucilage, shaking it well before taking.

COMPOUND MIXTURE OF BLOODROOT. *Cough Drops.* Take of Syrup of Squills, Syrup of Ipecacuanha, Tincture of Bloodroot, and Paregoric, each, half a fluidounce; mix.

This is a valuable mixture, useful in severe coughs from colds. The dose is from half a teaspoonful to a teaspoonful, whenever the cough is severe.

COMPOUND MIXTURE OF CAMPHOR. Take of Camphor water, Peppermint water, and Spearmint water, each, one fluidounce; Paregoric two fluidrachms; mix together. This is valuable in allaying nausea, and checking vomiting in cholera morbus, Asiatic Cholera, &c. The dose is from a fluidrachm to half a fluidounce, every five minutes, if the patient be vomiting; every ten minutes, if he be only nauseated.

ERIGERON MIXTURE. Triturate Oil of Erigeron half a fluidrachm, with powdered Gum Arabic half a drachm; White Sugar one drachm; and then gradually add water eleven fluidrachms, triturating constantly.

This is useful in flooding from the uterus, stomach, kidneys, &c., and in diarrhea and dysentery. The dose is a table-spoonful, in excessive flooding, every five, ten or twenty minutes; in ordinary cases, three or four times a day. Each fluidrachm contains five drops of the oil.

SALINE MIXTURE. *White Liquid Physic.* Take of Sulphate of Soda half a pound; water one and a half pints; mix, and dissolve the Soda; then add Nitro-Muriatic Acid two fluidounces; powdered Alum one drachm and eight grains.

This preparation is used as a cooling purgative, and to allay nausea and vomiting. It has been found very useful in colic, diseases of the liver, diarrhea, dysentery, intermittent fevers, &c. It is a most excellent remedy. The dose is a table-spoonful in a gill of water, repeated every hour or two, until it causes one or two evacuations from the bowels; to be repeated daily.

OINTMENTS.

Ointments are fatty materials, impregnated with certain medicines, or their medicinal principles, of a consistence similar to that of butter, and intended to be applied to the surface by rubbing, or on lint. They are apt to become rancid by long keeping, which, it is said, may be prevented by adding either Benzoic Acid, Poplar Buds, or Slippery Elm bark to the Ointment.

OINTMENT OF ACETATE OF LEAD. Take of White Wax two ounces, Lard four ounces; melt these together, and then add Acetate of Lead, in fine powder, two and a half drachms; stir constantly till cold. This Ointment is useful in ulcers, burns, scalds, blisters, excoriations, &c.

OINTMENT OF ACONITE. Take of Alcoholic Extract of Aconite one drachm; add a small quantity of Alcohol to it to soften it, and then

triturate it thoroughly with Lard one ounce. Tilden & Co.'s Extract will be found the best to use for this purpose.

This is used in violent neuralgic and rheumatic pains.

OINTMENT OF BAYBERRY. Take of Bayberry Wax, White Gum Turpentine, each, four ounces; Olive Oil two ounces; melt together and strain.—*H. Whiting.*

OINTMENT OF BELLADONNA. Take of Extract of Belladonna one drachm; soften it by trituration with some hot water, and then add Lard one ounce; mix.

This is an anodyne application, useful in local neuralgia, painful joints, &c.; also to dilate the pupils, as well as the os uteri. Tilden & Co.'s Extract will be found the best for this purpose.

OINTMENT OF HOPS. Take of Lupulin one ounce; Lard half a pound; triturate thoroughly together. This is used to relieve the pain of malignant ulcers, and in some cutaneous diseases, &c.

OINTMENT OF OXIDE OF ZINC. Take of Oxide of Zinc half an ounce; Lard three ounces; triturate them together. This is a mild astringent, useful in chronic inflammation of the eyes, diseases of the skin, sore nipples, excoriations, &c.

OINTMENT OF POISON HEMLOCK. Take of Extract of Poison Hemlock (*Conium Maculatum*) one drachm; soften it by trituration with a little hot water, and then add Lard one ounce; mix. Tilden & Co.'s Extract may be used.

This is a mild anodyne, useful as an application to painful swellings of the glands, painful and malignant ulcers, piles, &c.

OINTMENT OF POKE. Take of Extract of Poke one drachm; soften it, if necessary, by trituration with a little hot water, and then add Lard one ounce; mix.

This is useful in malignant ulcers, scald-head, itch, and several diseases of the skin.

OINTMENT OF STRAMONIUM. Take of Extract of Stramonium one drachm; soften it by trituration with a little hot water, and then add Lard one ounce; mix. Tilden & Co.'s Extract may likewise be used in this preparation.

This is an anodyne application, useful in some diseases of the skin, painful piles, painful ulcers, burns, scalds, &c.

OINTMENT OF SULPHATE OF ZINC. Triturate Sulphate of Zinc, in fine powder, one scruple, with fresh butter, containing no salt, two drachms.

This is useful in fungous growths, gangrenous and indolent ulcers, fistula, diseases of the skin, &c.

OINTMENT OF WHITE HELLEBORE. Take of White Hellebore root, in powder, one ounce, Lard four ounces, Oil of Lemons ten minims; triturate thoroughly together.

This ointment is used to cure the itch; its employment among children requires caution.

OINTMENT OF WILD INDIGO. Take of Wild Indigo root, in powder, one pound; thoroughly moisten it with alcohol, allowing it to stand for twenty-four hours, then transfer it to a percolator, and add alcohol as long as any passes containing the taste and virtue of the root. Distil off the alcohol from this filtered tincture until half a gallon of tincture is obtained.

Melt fresh Butter, containing no salt, one pound, add the above tincture, and carefully evaporate the rest of the alcohol; constantly stirring till cold, after the alcohol has nearly passed off. The original formula, according to Dr. H. Whiting, would require to be added to the above, about two ounces of tallow, and five of beeswax. This is an antiseptic, resolvent, and healing ointment, useful in many diseases of the skin, scrofulous, erysipelatous, malignant, and gangrenous ulcers, piles, &c.

OINTMENT OF WOODSOOT. Triturate together, clean Woodsoot, very finely powdered, one ounce, with Lard four ounces.

This is useful in burns, tinea capitis, erysipelatous inflammations, and some diseases of the skin. It should be spread on cotton batting, and then applied.

COMPOUND LEAD OINTMENT. *Mayer's Ointment.* To Olive Oil two pounds and a half, add White Turpentine half a pound, Beeswax, Unsalted Butter, of each, four ounces; melt them together, strain, and then heat them to nearly the boiling point, and add gradually Red Lead one pound, and stir constantly until the mixture becomes black or brown. Then remove from the fire, and when it has become somewhat cool, add to it a mixture of Honey twelve ounces, powdered Camphor, half a pound.

This ointment is much used as an application to all ulcers, cuts, wounds, burns, and some diseases of the skin. It is a healing ointment.

COMPOUND OINTMENT OF BAYBERRY. Take of Bayberry Tallow, Sweet Gum, each, half an ounce, Mutton Suet an ounce; melt together and strain. *Am. Ec. Disp.*

This ointment is useful in ringworm of the scalp, itch, scald-head, piles, salt-rheum, and some other diseases of the skin.

COMPOUND OINTMENT OF IODINE. Triturate Iodine fifteen grains, and Iodide of Potassium half a drachm, with Alcohol half a fluidrachm; then add Lard one ounce, and continue the trituration until they are well mixed.

This is used in scrofulous and other tumors, bronchocele, enlarged tonsils, &c. The discoloration of the skin occasioned by its use gradually disappears.

COMPOUND OINTMENT OF OXIDE OF ZINC. *Mild Zinc Ointment.* Triturate together in a mortar, until all is reduced to a fine powder, Oxide of Zinc three and a half ounces, Benzoic Acid one drachm, Sulphate of Morphia twenty-four grains, and Oil of Roses ten minims; then add to it the following melted mass, stirring constantly until nearly cold; Olive Oil one pound, White Wax two ounces, Spermaceti six ounces.

This is a gently stimulating and astringent application, which has proved serviceable in affections of the eye, ulcers, wounds, and some diseases of the skin.

COMPOUND OINTMENT OF SULPHUR. Take of Sulphur two ounces, powdered White Hellebore one drachm, Nitrate of Potassa fifteen grains, Soft Soap two ounces, Ointment of Poke six ounces, Oil of Bergamot half a fluidrachm. Rub these articles thoroughly together.

This ointment is efficacious in itch, when it proves obstinate, and will not disappear by the use of simple Sulphur Ointment.

PILLS.

Pills are round masses of various sizes, containing medicinal substances, and which are a very popular form for administration, as most persons prefer medicines when in pill form. They usually weigh from two to five grains, according to the substances entering into their composition, and the size best adapted for swallowing. In the preparation of pills, much care should be taken to have the articles thoroughly mixed together, so that active or powerful agents shall be equally distributed throughout the whole pill-mass. To prevent their adhering together, as well as to cover any unpleasant taste, they may be placed in some dry powder of Liquorice root, Cinnamon, or calcined Magnesia; the Liquorice is more commonly used.

COMPOUND PILLS OF ALOES. *Antidyspeptic Pills.* Mix thoroughly together, Powdered Aloes two ounces, Powdered Gamboge one ounce, Capsicum, and Lobelia, each, in powder, two drachms, Castile Soap one ounce. Then add Extract of Boneset, Extract of Mandrake, and Extract of Ginseng, of each, half an ounce. Beat and work the mass well together, and add five drops of Oil of Cloves. Divide into pills of four grains each.

These pills are useful in dyspepsia, constipation, jaundice, suppressed menstruation, and in all ordinary cases where cathartics are required. The dose is two, three, or four pills.

COMPOUND PILLS OF ACONITE. Take of Valerianate of Quinia ten grains, Extract of Stramonium two grains, Extract of Aconite fifteen grains; mix the articles together, and divide into thirty pills.

These pills will be found beneficial in fevers, and inflammatory diseases, especially where there is much irritability of the system, wakefulness, &c., also in nervous headache and several derangements of the nervous system. The dose is one pill, which may be repeated as required, every one, two, or four hours.

COMPOUND PILLS OF ASSAFETIDA. Mix together by a moderate heat, Opium, and Assafetida, each, in powder, twelve grains, and then, while soft, add Carbonate of Ammonia twelve grains; divide into twelve pills. *H. Whiting.*

These pills are anodyne and antispasmodic, and may be used in hysterics, and spasmodic affections. The dose is one pill, every two, or four hours, according to the severity of the symptoms. Each pill contains one grain of Opium.

COMPOUND PILLS OF BLACK COHOSH. Take of Valerianate of Quinia fifteen grains, Scutellarin half a drachm, Alcoholic Extract of Black Cohosh half a drachm; mix thoroughly together, and divide into thirty pills.

These pills are useful in chorea, and other derangements of the nervous system; also in fevers, or other diseases attended with much restlessness

or wakefulness, and in several uterine affections. Dose, one pill every one, two, or three hours, daily, according to the urgency of the symptoms.

COMPOUND PILLS OF CAMPHOR. *Cholera Pills.* Take of Camphor, Opium, Kino, each, in powder, thirty grains, Capsicum five grains, Conserve of Roses a sufficient quantity; mix together, and divide into thirty pills.

These pills are stimulant, antispasmodic, anodyne and astringent, and are useful in diarrhea, and Asiatic cholera; in cholera, one pill must be given after each discharge from the bowels, or oftener if the urgency of the case require it. When powders are preferred to pills, the Conserve of Roses may be omitted.

COMPOUND PILLS OF DANDELION. Take of Podophyllin one scruple, powdered Bloodroot, and Extract of Dandelion two drachms, Oil of Spearmint ten minims; mix together and divide into one hundred pills.

These pills are laxative, diuretic, and slightly nauseating; they are useful in jaundice, liver affections, and diseases of the kidneys. Dose, one or two pills, two or three times a day.

COMPOUND PILLS OF FERROCYANURET OF IRON. Take of Sulphate of Quinia, Ferrocyanuret of Iron, Alcoholic Extract of Black Cohosh, each, one drachm; mix together and divide into sixty pills.

These pills are very useful in periodical diseases, as fever and ague, epilepsy, St. Vitus' dance, &c.; they possess alterative, anti-periodic, and tonic virtues, and may be given in doses of one pill every three or four hours.

COMPOUND PILLS OF HIGH CRANBERRY. Take of Aletridin, Alcoholic Extract of Blue Cohosh, Extract of Partridge Berry, each, one drachm; Alcoholic Extract of High Cranberry two drachms; mix thoroughly together, and divide into eighty pills.

These pills are very efficacious in female diseases, as suppressed menstruation, painful menstruation, leucorrhea, sterility, &c.; also in spasmodic affections, cramps during pregnancy, &c. One or two pills may be taken two or three times a day.

COMPOUND PILLS OF HYOSCYAMUS. Take of Sulphate of Quinia, Extract of Aconite, each half a drachm; Extract of Cimicifuga, Extract of Hyoscyamus, each, one drachm; mix, and divide into sixty pills.

These pills are of service in rheumatic, and neuralgic affections, St. Vitus' dance, painful menstruation, &c. One pill may be taken every two or three hours, as the symptoms may require.

COMPOUND PILLS OF LEPTANDRIN. Take of Leptandrin one drachm, Podophyllin half a drachm, Extract of Rhubarb a sufficient quantity. Mix together and divide into sixty pills.

These pills are useful as a cholagogue medicine, and have been used in affections of the liver, dysentery, obstinate constipation, &c. One or two pills may be taken twice a day.

COMPOUND PILLS OF MOTHERWORT. Take of Leptandrin, Alcoholic Extract of Black Cohosh, each, one drachm; Aletridin, Hydro-Alcoholic Extract of Motherwort, each, two drachms. Mix thoroughly together, and divide into sixty pills.

These pills are useful in many diseases of the womb, acting as an uterine tonic and alterative. The dose is one pill every one, two, or four hours, according to the urgency of the case.

COMPOUND PILLS OF PODOPHYLLIN. Take of Podophyllin, Scammony, Gamboge, Capsicum, each, in powder, one drachm, Castile Soap half a drachm. Mix, and beat the whole together, till they are thoroughly incorporated, and divide into one hundred and twenty pills.

These pills are cathartic, and are very useful in dyspepsia, affections of the liver, &c. The dose is one or two pills every night.

COMPOUND PILLS OF QUINIA. Take of Sulphate of Quinia, Leptandrin, and Tartaric Acid, each, one drachm, Alcoholic Extract of Black Cohosh a sufficient quantity; mix together, and divide into four-grain pills.

These pills are useful in fever and ague, and all diseases of a periodical nature. The dose is one pill every one, two, or three hours, according to the severity of the attack.

COMPOUND PILLS OF SOAP. *Diuretic Pills.* Take of Oil of Spearmint, Oil of Juniper, Oil of Sassafras, each, one drachm; Castile Soap, two drachms. Put these in an iron mortar, beat and mix thoroughly together, and divide into twenty pills.

These pills are useful in gravel, and all chronic urinary affections requiring a stimulant diuretic. The dose is two or three pills, three times a day.

COMPOUND PILLS OF VALERIAN. Take of Scutellarin, Extract of Chamomile, each, two drachms; Sulphate of Quinia, Extract of Boneset, each, one drachm, Capsicum one scruple, Oil of Valerian half a drachm. Mix thoroughly together, and divide into four-grain pills.

These pills are tonic and nervine, and may be used wherever they are indicated. Dose, one pill, every two or three hours.

IODINE PILLS. Take of Iodine twenty grains, Sulphate of Morphia two grains, Leptandrin forty grains; triturate together in a glass or wedge-wood mortar, and make into a pill-mass with simple syrup or Extract of Liquorice a sufficient quantity, and divide into forty pills.

These pills are very useful in scrofula, and all diseases in which Iodine is recommended. One pill may be taken every night and morning.

PLASTERS.

Plasters are mixtures of oils, fats, resins, wax, &c., with or without the addition of active medicinal agents, and which, although solid at ordinary temperatures, become soft and adhesive at the heat of the body without melting. They are generally spread upon leather, muslin, or linen, and in softening them for spreading upon these articles, great care should be taken not to expose them to too high a heat, as volatile principles may thereby be dissipated, or decomposition ensue. Their uses are, to produce medicinal influences, to protect parts from contact with the air, or, to give support to debilitated parts.

BAYBERRY PLASTER. Take of White Gum Turpentine and Bay-

berry Wax, each, four ounces, Melt together, strain, and stir till cold. In winter, if necessary, a small quantity of Olive Oil may be added. It may be worked into rolls. *H. Whiting.*

This forms a very valuable plaster, useful in scrofula and other ulcers.

COMPOUND CAPSICUM PLASTER. *Common Strengthening Plaster.* Melt together Rosin half a pound, Beeswax two ounces, and strain. To this add Spirit one pint in which powdered Capsicum two ounces, contained loosely in a muslin bag, has been digested by a gentle heat for one hour. Evaporate the Spirit by a moderate heat, and add powdered Camphor one ounce, Oil of Sassafras one fluidrachm and a half; stir constantly till cold.

This is rubefacient and stimulant, and may be used whenever a stimulating plaster is required. *H. Whiting.*

COMPOUND LEAD PLASTER. Take of Lead Plaster one pound; melt it by a moderate heat, and then add to it Linseed Oil, Tincture of Opium, two fluidounces, Oil of Turpentine six fluidounces, Oil of Origanum two-thirds of a pound; stir together, until cold.

This is useful in burns, scalds, some diseases of the skin, chilblains, &c. The affected part must be thickly covered with the plaster, over which a layer of raw cotton must be secured, allowing it to remain until the burn, &c., is well.

COMPOUND PLASTER OF BELLADONNA. Take of Resin Plaster three ounces, Extract of Belladonna, Extract of Poison Hemlock, (*Conium Mac.*) each, one ounce and a half, powdered Iodine half a drachm. Melt the Resin plaster, then add in the extracts, triturate thoroughly together, and when nearly cool, add the Iodine.

This plaster is an efficacious application to scrofulous and other tumors, goitre, white swelling, neuralgic, syphilitic, and rheumatic pains, &c.

COMPOUND RESIN PLASTER. *Adhesive and Strengthening Plaster.* Take of Rosin three pounds, Beeswax four ounces; melt the articles together, then remove from the fire, and when nearly cold, add gradually, Camphor half an ounce, dissolved in Oil of Hemlock, Oil of Sassafras, and Olive Oil, each, one fluidounce, Oil of Turpentine half a fluidounce. Pour the whole into cold water, and work in the hands till cold, forming the plaster into rolls or sticks.

This is an elegant plaster, useful in rheumatism, weakness of the joints, wounds, ulcers, &c.

COMPOUND TAR PLASTER. *Irritating Plaster.* Boil Tar three pounds, for half an hour; then add Burgundy Pitch one pound and a half, White Gum Turpentine one pound, (having previously melted them together, and strained.) Stir them together, remove from the fire, and add finely powdered Mandrake root, Bloodroot, Poke root, Indian Turnip, of each, ten ounces. Incorporate well together.

This plaster is irritant, rubefacient, and suppurative, and may be used in all cases where counter-irritation or powerful revulsion is required. It has been used with success in neuralgia, rheumatism, and other painful affections, as well as in chronic inflammation of internal organs. It should be spread thinly on soft leather, renewing it every day, on the same leather. Three or four days generally pass before it produces suppuration, after which it should be renewed as often as the discharge may require. The sore

produced by it should not be wet, as it will be rendered more painful. If too much suffering be caused by this plaster, it may be removed, and the part healed by simply applying a linen cloth on which mutton tallow has been spread. Any great degree of inflammation or irritation caused by it, may be removed by an Elm poultice.

RED OXIDE OF LEAD PLASTER. *Black Salve.* Melt together Olive Oil one quart, Resin and Beeswax, each, one ounce; raise the heat until a feather dipped into it will scorch, that is, to the boiling point, and then add gradually powdered Red Lead three quarters of a pound. Stir constantly, until the oil and lead unite, as known by the black color of the preparation; then set the mixture aside, stirring it until it becomes cool, when powdered Camphor, four scruples, may be added.—*H. Whiting.* Do not remove the above from the fire until it becomes brownish or black, and forms a **thick** salve when allowed to cool upon a knife dipped into it.

This plaster is a valuable application to scrofulous, syphilitic, and other ulcers, burns, scalds, and several diseases of the skin.

LEAD PLASTER. *Diachylon.* Take of Semivitrified Oxide of Lead, (*Litharge*) in very fine powder, one pound and a quarter, Olive Oil one quart, water half a pint. Boil them together over a moderate fire, constantly stirring until the Oil and Litharge unite to form a plaster. If the water be nearly all evaporated before the end of the process, a little boiling water must be added.

This plaster is useful in burns, slight wounds, excoriated surfaces, ulcers, &c.

RESIN PLASTER. Melt together by a gentle fire, Lead Plaster, one pound and a half, Resin one quarter of a pound. This is used for holding the edges of wounds together, for dressing ulcers, &c. It is generally spread on muslin, and sold in the shops under the name of *adhesive plaster*. The following is said to form a very elegant adhesive plaster:—Melt together Lead Plaster twenty-seven drachms, Resin Plaster six ounces, Soap, sliced, five drachms; when thoroughly incorporated, spread on linen.

POWDERS.

POWDERS, when not in too bulky doses, are a very convenient and useful mode of administering many remedies; very nauseous or corrosive agents, or those which change rapidly on exposure to the air, are best given in pill, tincture, or some other form. The finer an article is powdered, as a general rule, the more active it becomes. When one agent alone is pulverized, it is termed a *simple powder*; when two or more simple powders are mixed together, the preparation is called a *compound powder*. Powdered articles become deteriorated in activity when acted on by light and air, consequently they should be kept in well covered tin vessels, or in glass bottles, closely stopped, and excluded from the light by being painted black, or else kept in a dark place. They are usually given in water, gruel, milk, syrup, molasses, or honey, &c., always bearing in mind whether the vehicle be compatible with the active ingredients of the powder.

COMPOUND POWDER OF CAMPHOR. Mix together Camphor, Tannic Acid, Kino, of each, in powder, ten grains; Opium in powder, five grains; and divide into ten powders. This powder should be prepared only as wanted.

It possesses astringent and anodyne properties, and will be found highly efficacious in Asiatic Cholera, Cholera Morbus, and severe diarrhea. In severe cases, one powder should be given immediately after each discharge, or if the symptoms are urgent, even more frequently. In ordinary cases, three or four powders a day, will be sufficient. They may be given in syrup or jelly, and when a stimulating action is indicated, ten or twenty grains, of powdered Capsicum may be added to the formula.

COMPOUND POWDER OF CHARCOAL. Mix together, prepared Charcoal one ounce, powdered Rhubarb half an ounce, Bicarbonate of Soda two drachms.

Persons laboring under dyspepsia, loss of appetite, sour stomach, derangement of the bowels, &c., will find this very valuable, in doses of a teaspoonful every three or four hours during the day. It may be taken in water, or Indian meal gruel.

COMPOUND POWDER OF GOLDEN SEAL. Mix together, Blue Cohosh, Helonias, Golden Seal, of each, in powder, two drachms.

This preparation will be found useful in dyspepsia attended with distressing sensations in the stomach shortly after a meal, also in chronic inflammation of mucous tissues, and ulcerations of the mouth and throat. The dose is from half a teaspoonful to a teaspoonful every three or four hours.

COMPOUND POWDER OF HYDRASTIN. Take of Hydrastin, Myricin, Rhubarb, each, in powder, half a drachm; mix together, and divide into thirty powders.

This is a tonic and slightly laxative preparation, and may be used in some forms of dyspepsia, chronic inflammation of the stomach, jaundice, and during recovery from acute diseases. One powder may be taken every three or four hours during the day, but not so often as to occasion more than one or two daily evacuations from the bowels.

COMPOUND POWDER OF IPECACUANHA AND OPIUM. *Diaphoretic Powder.* Take of Opium, in powder, ten grains, Camphor, in powder, two scruples, Ipecacuanha, in powder, one scruple, Nitrate of Potassa eight scruples; mix thoroughly together.

This is an anodyne and diaphoretic preparation, useful in all febrile, inflammatory, rheumatic, nervous, and painful affections. It relieves pain, allays nervous irritation, promotes perspiration, quiets the system, and disposes to sleep. The dose is from three to five grains every three or four hours, or oftener, if required. Warm herb teas, drank freely, promote its diaphoretic action.

COMPOUND POWDER OF JALAP. *Antibilious Physic.* Take of Alexandria Senna, in powder, half an ounce; Jalap, in powder, two drachms; Ginger, half a drachm; mix thoroughly together.—*H. Whiting.*

This is a valuable purgative, useful in nearly all cases where such action is required; being contra-indicated in severe inflammation of the stomach or bowels, in excessive menstruation, during pregnancy, &c. The dose is a teaspoonful, which may be taken in milk, wine, cider, lemonade, coffee, &c.; the usual mode is to place the dose in about a gill of boiling water, let it stand till cold, then sweeten, if desired; and drink the whole contents.

COMPOUND POWDER OF LEPTANDRIN. Mix together powdered Podophyllin ten grains, Leptandrin one scruple, Sugar of Milk five scruples; when thoroughly triturated, divide into sixteen powders.

This is a cholagogue cathartic of immense benefit in epidemic dysentery; a powder may be given every hour or two, until it operates freely. It is also useful in typhoid, remittent, and intermittent fevers with or without the addition of Sulphate of Quinia, and in all derangements of the biliary apparatus. In doses of three or four grains, every three or four hours, it is an excellent alterative.

COMPOUND POWDER OF LOBELIA. *Emetic Powder.* Take of Lobelia in powder, one ounce, Bloodroot and Skunk Cabbage, each, in powder, half an ounce, Ipecacuanha five and a half drachms, Capsicum four scruples; mix thoroughly together.

This is useful in all cases where an emetic is required, producing a free and easy vomiting, without causing cramps, or unpleasant prostration. The dose is half a teaspoonful repeated every fifteen minutes, and exhibited three or four times, until free vomiting is caused; it may be given in common water, or warm Boneset tea, either of which may be drank freely to facilitate the operation.

COMPOUND POWDER OF PODOPHYLLIN. Take of Podophyllin four grains, Cream of Tartar three drachms, Capsicum one scruple; mix intimately.

This is used in dropsy, obstructed menstruation, and wherever an active hydragogue is indicated. The dose is one scruple, repeated every two hours, until a sufficient evacuation has been procured.

COMPOUND POWDER OF QUINIA. Mix together, thoroughly, Prussiate of Iron and Sulphate of Quinia, each, one scruple.

This is tonic and antiperiodic, and may be used in all febrile, inflammatory and chronic diseases, attended with symptoms of a periodical character. The dose is from two to six grains, every one, two, or four hours, according to the severity of the symptoms.

COMPOUND POWDER OF RHUBARB AND POTASSA. *Neutralizing Powder.* Take of Rhubarb, two drachms; Bicarbonate of Potassa, one drachm; mix thoroughly together.

This is a valuable medicine in diarrhea, cholera-morbus, dysentery, summer-complaint of children, acid stomach, heart-burn, and as a mild laxative during pregnancy. The dose is from half a teaspoonful to a teaspoonful, every one, two, or three hours, as required, in some peppermint water.

COMPOUND POWDER OF XANTHOXYLIN. Take of Sulphate of Quinia, Hydrastin, and Xanthoxylin, each, one scruple; mix together with Sugar of Milk a sufficient quantity to form a powder; divide this into twenty powders.

This preparation is stimulant, alterative, and tonic, and is useful in dyspeptic affections, weakness of the digestive powers, periodical headache, and many chronic diseases. The dose is one powder in syrup, water, or wine, and repeated every three or four hours during the day.

ENTOZOIC POWDER. *Worm Powder.* Take of White Indian Hemp root, (*Asclepias Incarnata*,) Mandrake, Pink-root, Bitter-root, (*Apoc.*

Andros.) of each, in powder, one ounce, Balmony, in powder, two ounces, Socotrine Aloes, in powder, four scruples; mix thoroughly together.

This is a very bitter, but certain remedy for any worm that may exist in the human alimentary canal. For a child a year old, place a teaspoonful of the powder in a gill of molasses, and give a teaspoonful of the mixture every one or two hours, until it operates freely; after which give a teaspoonful three times a day for several days in succession; or less, if it purges too freely. Adults may take half a table-spoonful every hour.

SYRUPS.

SYRUPS are strong infusions or decoctions, &c., of one or more medicinal substances, which are kept in a state of preservation by the addition of a certain amount of sugar. A mere concentrated solution of sugar in water, is called *simple syrup*; the others are *medicated syrups*. Syrups should always be kept in well-stopped vessels, and in a cool place. The usual mode of making Syrups, is according to Mr. Wm. S. Merrell's plan, which is named under *Compound Syrup of Sarsaparilla*; this plan may be pursued in the following Syrups, when not otherwise ordered, taking care to correctly proportion the quantities of sugar, alcohol, &c., to the amount in weight of medicines used. The following Syrups may be made according to the directions, or they may be obtained of Messrs. W. S. Merrell & Co., and F. D. Hill, Druggists of Cincinnati, O., who prepare efficacious and reliable articles, which they furnish at reasonable rates.

COMPOUND SYRUP OF PARTRIDGE-BERRY. *Mother's Cordial.* Take of Partridge-berry half a pound; Helonias, Blue Cohosh, and High Cranberry bark, each, two ounces; cover the whole with good Brandy two pints, and let them macerate for three or four days. Then press out the Brandy, and there will be about one pint and a half obtained, which reserve. Place the herbs in boiling water six pints, and slowly boil down to two and a half pints. Strain, add sugar one pound, and evaporate to two and a half pints. Remove from the fire, and when nearly cold, add the reserved pint and a half of Tincture.

This is a valuable agent in all derangements of the female reproductive organs, as suppressed menstruation, painful menstruation, profuse menstruation, leucorrhea, and habitual abortions. It imparts tone and vigor to the uterus, on which account it is very useful for those females who are apt to have tedious labors from a proper want of uterine action; in these instances, it should be taken during the last two or three months of pregnancy. The dose is from half a wineglassful to a wineglassful, two or three times a day.

The "*Parturient Balm*" is a preparation used by some practitioners for similar purposes to the above. It is made as follows:—Take of Spikenard and Blue Cohosh, each, half a pound; Partridge-berry, Queen of the Meadow, and Black Cohosh, each, four ounces; Comfrey and Ladies' Slipper root two ounces. Cover the whole with a pint and a half of good Brandy, let them macerate for three days, and press out the Brandy, which will amount to one pint, which reserve. Place the herbs in boiling water one gallon and a half; boil slowly down to one gallon, add sugar six pounds, and evaporate to one gallon; remove from the fire, and when nearly cold, add the reserved pint of Tincture. The dose is a table-spoonful three or four times a day.

COMPOUND SYRUP OF RHUBARB AND POTASSA *Neutralizing Cordial.* Take of best India Rhubarb, in coarse powder, and Bicarbonate of Potassa, each, half a pound; Cinnamon, Golden Seal, each, four ounces; macerate for two days in best fourth proof Brandy one gallon; then express the Tincture with strong pressure, and add to it Oil of Peppermint two fluidrachms, previously dissolved in a little Alcohol.

Break up the cake or compound residue from the press, and place it in a displacement apparatus, and gradually add warm water until the strength of the articles is exhausted. Evaporate this solution to eight pints, and while the liquor is still hot, dissolve in it refined sugar six pounds. Continue the evaporation, if necessary, until when added to the Tincture first obtained, it will make three gallons and mix the two solutions together.

This is a pleasant antacid and laxative preparation, very useful in diarrhea, dysentery, cholera-morbus, summer-complaint of children, and in the same diseases as the Compound Powder of Rhubarb. It may likewise be used in cases of piles, in habitual costiveness, and to act on the bowels during pregnancy. The dose for an adult is a table-spoonful every half-hour, hour, or two hours, according to the urgency of the symptoms.

COMPOUND SYRUP OF SARSAPARILLA. *Alterative Syrup.* Take of the roots of Honduras Sarsaparilla, Yellow Parilla, Burdock, and ground Guaiacum wood, each, ten ounces, avoirdupois; bark of Sassafras root, Blue Flag root, and Elder Flowers, each, eight ounces, avoirdupois.

1. Grind and mix the articles together, place the whole four pounds in a convenient vessel; cover them with Alcohol of seventy-six per cent, and macerate for two days; then transfer the whole to a common displacement apparatus or percolator, and gradually add hot water, until two pints have been obtained, which retain and set aside.

2. Then continue the percolation, and of the second solution reserve so much as contains a sensible amount of spirit, and distil or evaporate the Alcohol from it.

3. Continue the displacement by hot water, until the solution obtained is almost tasteless, and boil down this weaker infusion till it begins to thicken, or until, when added to the balance remaining of the second portion, after the evaporation of the Alcohol, it will make twelve pints.

4. To these two solutions combined, add refined Sugar sixteen pounds, and by heat dissolve—carefully removing any scum which arises, as it comes to the point of boiling. Then, if it exceeds fourteen pints, evaporate the Syrup with constant stirring to this quantity; remove from the fire, and when nearly cold, add the two pints of Tincture first obtained, and make two gallons of Syrup. Each pint will contain the virtues of four ounces of the ingredients.

This forms an excellent alterative Syrup, and is much used in chronic affections of the liver, rheumatism, syphilis, scrofula, diseases of the skin, ulcers, white swellings, rickets, necrosis, and every taint of the system. Some physicians add Iodide of Potassium half an ounce to every pint of Syrup. The dose is a table-spoonful every three or four hours, in an equal quantity or more of water.

COMPOUND SYRUP OF SPIKENARD. *Pulmonary Balsam.* Take of Red root one pound, the roots of Elecampane, Comfrey, Wild Cherry Bark, and Leaves and Flowers of Hoarhound, each, half a pound, Blood-root four ounces.

Proceed to make into a Syrup, similar to the directions given for the Compound Syrup of Sarsaparilla, reserving two pints of the strongest

tincture, using twelve pounds of Refined Sugar, and making one gallon and a half of Syrup.

This is used in coughs, pulmonary affections, and diseases of the liver. The dose is a table-spoonful three or four times a day.

COMPOUND SYRUP OF STILLINGIA. Take of Queen's Root, and Turkey-corn, each, one pound; Blue Flag Root, Pipsissewa Leaves, and Elder Flowers, each, half a pound; Prickly Ash Berries, and Cardamom seeds, each, four ounces. Proceed to make into a Syrup, similar to the directions given for the Compound Syrup of Sarsaparilla, reserving two pints of the strongest tincture, using twelve pounds of Refined Sugar, and making two gallons of Syrup.

This syrup is a most powerful and effective alterative, and is successfully used in all syphilitic, scrofulous, osseous, mercurial, glandular, and liver affections, and in all cases where an alterative is required. The dose is from a teaspoonful to a table-spoonful, every three or four hours, in a small quantity of water. Some practitioners add Iodide of Potassium, half an ounce to every pint of syrup.

Dr. J. Z. Hall, has kindly forwarded me the following formula for the preparation of this Syrup by Mr. Glenn of St. Louis, Mo., and which he values very highly: Take of Stillingia four pounds, Yellow Dock, and Pipsissewa, each, two pounds, Blue Flag one pound and a half, Coriander, Turkey-corn, Prickly Ash Berries, each, one pound, Bloodroot half a pound. Make into a Syrup, as above, with Refined Sugar thirty-four pounds; making seven gallons when finished.

COMPOUND SYRUP OF YELLOW DOCK. *Scrofulous Syrup.* Take of Yellow Dock root two pounds, Bark of the Root of False Bittersweet, one pound, American Ivy, [*Ampelopsis Quinq.*] and Root and Herb of Figwort, [*Scroph. Mariland.*] each, half a pound.

Proceed to make into a Syrup, similar to the directions given for the Compound Syrup of Sarsaparilla, reserving two pints of the strongest tincture, using sixteen pounds of Refined Sugar, and making two gallons of Syrup.

This is an alterative preparation, very efficacious in scrofula, and all chronic tuberculous diseases. The dose is a table-spoonful three or four times a day. Iodide of Potassium is sometimes added to it, half an ounce to every half-pint of the Syrup.

LEMON SYRUP. To Water one gallon, add Citric Acid half a pound, Ivory Black one pound, and Refined Sugar thirteen pounds. Boil together, filter, and add Oil of Lemon one fluidrachm; or, it may be made by adding a drachm of powdered Citric Acid, to a pint of Simple Syrup, and two or three drops of Oil of Lemons.

This forms an agreeable and refrigerant beverage when added to water, or other fluids intended for persons laboring under febrile complaints.

SIMPLE SYRUP. Dissolve Refined Sugar two and a half pounds in Water a pint, by means of heat, removing any scum which may rise to the surface, and strain while hot.

This syrup is much employed in making medicated syrups, pills, mixtures, &c.

SYRUP OF BALSAM PERU. Take of Tincture of Balsam Peru, one

fluidounce, warm Simple Syrup, two pounds; mix, and shake thoroughly together.

This is useful in cough, chronic catarrh, bronchitis, and laryngeal affections. The dose is a teaspoonful as often as required. The Tincture of Balsam Peru may be made by dissolving one ounce of the Balsam in Alcohol eight fluidounces.

SYRUP OF GARLIC. To Distilled Vinegar one pint, add Garlic, cut in slices, two ounces; digest by a gentle heat, for three or four days, then express and strain, and add Refined Sugar two pounds; dissolve with the aid of a gentle heat.

This is a useful expectorant in chronic catarrh, cough, &c., of children, in doses of a teaspoonful as often as required.

SYRUP OF GINGER. To two pints of Simple Syrup add Tincture of best Jamaica Ginger two fluidounces; evaporate the Alcohol by a gentle heat.

This is stimulating and carminative, removing flatulency, giving tone to the stomach and bowels, and is frequently added to other medicines to modify their action, or improve their flavor. The dose is from half a teaspoonful to a table-spoonful, as may be required.

SYRUP OF IPECACUANHA. Macerate Ipecacuanha, in powder, eight ounces, Troy, in Alcohol of specific gravity 0.835, twelve fluidounces, for twelve hours; then add of Alcohol, a sufficient quantity to make the mixture of the consistence of Syrup, and introduce the whole into a filter, or suitable displacer, laying a piece of muslin on the surface. When the mass has settled down uniformly, add more Alcohol to make the filtered liquid measure half a gallon, reserving the first half-pint that comes through. The remainder must be evaporated to half a pint, and then add the reserved half-pint. Two fluidounces of this fluid extract are equal to one Troy ounce of the root.

To Simple Syrup four pints, add of the above Fluid Extract of Ipecacuanha eight fluidounces, and evaporate the mixture to three pints; then add of Simple Syrup four pints, Water one pint, thus making one gallon of Syrup of Ipecacuanha.

This is used as an emetic and expectorant, principally among children affected with colds, coughs, &c. As an emetic, the dose for an adult is one or two fluidounces—for a child a year or two old, one or two teaspoonfuls,—to be repeated every ten or twenty minutes, until it operates. As an expectorant, one or two teaspoonfuls may be given to an adult, and from five to thirty drops to a child.

SYRUP OF SENEKA. Prepare an Alcoholic Fluid Extract of Seneka root, in the same manner as described for Syrup of Ipecacuanha; from which the Syrup of Seneka may be made, also in a similar manner.

This is a stimulating expectorant and may be used in colds, coughs, catarrhs, and affections of the chest, after the active or inflammatory symptoms have subsided. The dose for an adult is one or two teaspoonfuls, as often as required.

SYRUP OF SQUILL. By the aid of a moderate heat, dissolve Refined Sugar one pound in Vinegar of Squill half a pint; remove any scum which may arise, and strain while hot.

This syrup is used as an expectorant in coughs and catarrhs, especially among infants and children; also as an emetic for infants. The dose is from half a teaspoonful to a teaspoonful.

SYRUP OF TOLU. To Simple Syrup one pint, add Tincture of Tolu two fluidounces; gently heat the mixture to evaporate the Alcohol.

This is used in coughs, and to give an agreeable flavor to several preparations; the dose is from half a teaspoonful to a table-spoonful, as may be required.

SYRUP OF WILD CHERRY. To hot simple Syrup one pint add finely powdered Wild Cherry bark, loosely placed in a coarse muslin bag, five ounces. Suspend the bag in the Syrup, and cover the vessel; digest by a gentle heat for twenty-four hours, and then express all fluid from the powder in the bag, and add it to the rest of the syrup.

This is tonic and sedative, and may be used in all cases where the bark is indicated or desired, in doses of a table-spoonful. It may also be prepared by moistening the bark with water, placing it in a percolator, adding water until a pint of liquor is obtained; this may be made into a syrup by dissolving in it, with agitation, two pounds of refined sugar.

TINCTURES.

TINCTURES are the solutions of medicines in various fluids, effected by simply standing in them for a certain length of time, being frequently shaken; by digestion with a gentle heat; or by percolation. When prepared with alcohol, or diluted alcohol, they are simply called *tinctures*; when aqua ammonia is the solvent, they are termed *ammoniated tinctures*; and when it is ether, *ethereal tinctures*. Gin, brandy, &c., form *spirituous tinctures*; wines, *vinous tinctures*, or *medicated wines*. When diluted alcohol is designated, it is about the strength of a mixture of two parts of rectified alcohol, with one part of water, or of specific gravity, 0.935. The article to be tintured should always be reduced to a very fine powder, placed in a vessel with the solvent liquid, and be kept well stopped, frequently shaking it thoroughly. *Macerating*, is allowing the articles to stand without heat; *digesting*, is effecting the solution with the aid of a gentle heat; *expressing*, is to press out all the liquid from roots, herbs, &c., used in making tinctures, and is commonly effected by a small press made for the purpose, though, where this cannot be had, it will be better to allow the herbs to deposit at the bottom of the vessel, and use the clear fluid above, as it may be wanted from time to time. This course will also dispense with *filtering*, which is generally accomplished by passing the tincture through filtering paper. All tinctures should be kept in well closed bottles, at a low temperature, and free from exposure to light; they should also be made only in small quantities at a time.

Most tinctures of the present day are made by percolation, which is the better plan; but where this cannot be done, the ordinary method by maceration, or digestion, will be found to answer the purpose, but is more tedious and troublesome. Percolation is effected as follows:—Thoroughly moisten the powdered article to be used with the solvent, whatever this may be, and then place it in a percolator, being careful not to pack it so tightly as to cause the fluid to pass through too slowly, nor so loosely as to allow the fluid to run through rapidly. The solvent is now gradually poured upon

the article, from time to time, until the desired quantity of tincture has percolated or filtered through.

AMMONIATED TINCTURE OF CASTOR. Take of Castor, bruised, two and a half ounces; Assafetida, in small pieces, ten drachms; spirit of Ammonia two pints, (Imperial measure.) Digest for seven days in a well-closed vessel; strain, and strongly express the residuum, and filter the liquor.

This is a stimulant to the nervous system, and is very useful in spasmodic affections, as hysteria, &c.; it is contra-indicated when inflammatory symptoms are present. The dose is from thirty to sixty drops, or more.

AROMATIC SPIRIT OF AMMONIA. Take of Muriate of Ammonia two and a half ounces; Carbonate of Potassa four ounces; Lemon Peel two ounces; Cloves, Cinnamon, of each, bruised, one drachm; Alcohol, water, of each, two and a half pints. Add the articles together in a retort, and distil off three and three quarter pints.

This is an aromatic stimulant and antacid, and may be used in hysteria, fainting, flatulent colic, sour stomach, sick headache, &c. The dose is from thirty to sixty drops, in sweetened water.

AROMATIC TINCTURE OF GUAIAIACUM. *Greenhow's Cholera Mixture.* Take of Guaiacum, Cloves, and Cinnamon, in powder, each, half an ounce; Brandy one pint; macerate for fourteen days, and filter.

This is an excellent aromatic stimulant and astringent, and was much used by the late Prof. T. V. Morrow, in Asiatic cholera. The dose is from a teaspoonful to a table-spoonful, in sweetened water, every fifteen or twenty minutes, until relief is obtained.

CAMPHORATED TINCTURE OF OPIUM. *Paregoric.* Take of Opium one drachm; reduce it to an emulsion in boiling water one fluid-ounce, then add Benzoic Acid one drachm; Oil of Anise a fluidrachm; clarified Honey two ounces; Camphor two scruples; Alcohol, of 76 per cent., twenty-two fluidounces; distilled water nine fluidounces; macerate for seven days and filter.

This is an agreeable anodyne, and is much used to relieve asthmatic affections, hooping-cough, cough, nausea, diarrhea, pains in the bowels, &c.; also to cause sleep among young children. The dose for an adult is one or two teaspoonfuls; for an infant, five or ten drops.

COLOGNE. Take of Oil of Rosemary, Oil of Lemon, each, two fluidrachms; Oil of Lavender, Oil of Bergamot, each, one fluidrachm; Oil of Cinnamon, Oil of Cloves, Oil of Roses, each, ten drops; Alcohol one pint. Mix, and allow the mixture to stand for a few days, frequently shaking it, and, if necessary, filter.

This forms a pleasant perfume, very much resembling the German Cologne. Rubbed upon the head, or on the body, it speedily destroys lice; it should be used for several days in succession for this purpose.

COMPOUND ACETATED TINCTURE OF BLOODROOT. *Acetous Emetic Tincture.* Take of Bloodroot, Lobelia Seed, Skunk Cabbage Root, each, in powder, one ounce; distilled Vinegar one pint. Mix, and macerate in a close glass vessel for fourteen days; then express, filter, and to the filtered liquor add alcohol one fluidounce.

This is used in all cases where an emetic is required; and is also useful

as an external application to erysipelas, tetter, and other forms of skin disease. The dose is from one to four fluidrachms, in some sweetened aromatic infusion, repeating it every ten or fifteen minutes until vomiting is produced. In smaller doses, repeated every hour or two, it acts as an expectorant.

COMPOUND TINCTURE OF ASSAFETIDA. Take of Lupulin, Assafetida, in small pieces, Stramonium seeds bruised, powdered Valerian root, each, half an ounce; Alcohol one pint and a half. Let them stand for two weeks, frequently shaking; then express and filter.

This is anodyne and antispasmodic, and is very useful in all nervous disorders, as epilepsy, St. Vitus' dance, hysterics, &c. It may be given in teaspoonful doses, repeating them every two or three hours, and may be taken alone, or diluted with water or wine.

COMPOUND TINCTURE OF BENZOIN. Take of Benzoin one ounce and a half; purified Storax one ounce; Balsam of Tolu half an ounce; powdered Aloes two drachms; Alcohol one pint. Let them stand for two weeks, frequently shaking, and filter.

This tincture is sometimes used as a local application to burns and scalds, of some standing, and to obstinate ulcers; it is also used in chronic diseases of the air passages, in doses of from thirty to sixty drops.

COMPOUND TINCTURE OF BLACK COHOSH. Mix together tincture of Black Cohosh one fluidounce; tincture of Bloodroot half a fluidounce, and tincture of Pokeroor two fluidrachms.

This is expectorant and alterative, and is useful in diseases of the lungs, liver and stomach; it allays nervous excitability, lessens the action of the pulse, and relieves cough. The dose is from twenty to sixty drops, three or four times a day, or sufficient to produce a very slight sensation of nausea.

COMPOUND TINCTURE OF BLUE COHOSH. Take of powdered Blue Cohosh root one ounce; Water Pepper, Ergot, each, bruised, half an ounce; Oil of Savin two fluidrachms; Alcohol twelve fluidounces. Mix, macerate for fourteen days, and filter.

This forms a useful uterine tonic, and is valuable in suppressed menstruation, painful menstruation, and other functional derangements of the womb. A teaspoonful may be taken two or three times a day.

COMPOUND TINCTURE OF CAMPHOR. *Rheumatic Tincture, or Liniment.* Take of Camphor four ounces; Oil of Origanum, Oil of Hemlock, each, two ounces; Oil of Sassafras, Oil of Cajeput, each, half an ounce; Oil of Turpentine two fluidrachms; Capsicum one ounce; Alcohol two pints. Mix, macerate for fourteen days, and filter.

This is an efficacious external application in almost every painful affection; and is of advantage in chronic rheumatism, bruises, sprains, chilblains, lameness, numbness, &c. In ordinary cases, apply from two to four teaspoonfuls to the affected part, and rub it well by the fire; and apply warm flannel over the region of the affected part, several times a day. In severe and obstinate cases, after bathing as above directed, apply an additional piece of flannel, which must be kept constantly wet with the drops, until relieved. When applied to the teeth, wet a small quantity of cotton, and introduce it into the cavity of the decayed tooth; if the face is swollen, bathe with it likewise. Internally, twenty drops on sugar may be taken for a dose, and repeated three or four times a day.

COMPOUND TINCTURE OF COLCHICUM. Take of Tincture of Black Cohosh, Tincture of Colchicum Seed, each, one fluidounce; mix.

This is an excellent remedy in inflammatory rheumatism and gout, and has proved a superior remedy in phlegmasia dolens, or the swelled leg of lying-in women. The dose is from ten drops to a teaspoonful, or more, as circumstances indicate, to be repeated every one, two, or four hours. Ten or fifteen grains of Iodide of Potassium added to each fluidounce of the tincture, will in some cases improve its efficacy.

COMPOUND TINCTURE OF GENTIAN. Take of Swamp Milkweed, Colombo, Sassafras, Rhubarb, Gentian, Prickly-Ash berries, each, in coarse powder, two drachms, Brandy one pint. Mix; let them stand for two weeks with frequent shaking, and then filter.

This is a pleasant stimulating tonic and laxative, very efficacious among children with weak stomachs, impaired digestion, worms, &c.; and during recovery from summer-complaint, diarrhea, fevers, &c. From twelve drops to a fluidrachm in sweetened water, may be taken for a dose, and repeated every three or four hours.

COMPOUND TINCTURE OF GOLDEN SEAL. Take of Lobelia seed, Golden Seal, each, in powder, one ounce, diluted Alcohol one pint. Macerate for fourteen days, express, and filter through paper.

This is used as a local application to diseased mucous surfaces, as in chronic ophthalmia, chronic catarrh, leucorrhea, gleet, &c. It may be applied on a sponge, or by means of a camel's hair pencil; in some cases, it must be diluted with water.

COMPOUND TINCTURE OF HEMLOCK. *Golden Tincture.* Take of Balsam of Tolu, Guaiacum, Gum Hemlock, Gum Myrrh, each, in powder, one ounce, Oil of Hemlock one ounce and a half, Oil of Wintergreen one ounce, Alcohol four pints. Mix, and let them stand for two weeks with frequent shaking, and then filter.

This is a very useful internal remedy in rheumatism, flatulent colic, water-brash, pain or soreness of the chest or stomach, hysterics, depressed spirits, &c. A teaspoonful may be taken in a wineglassful of sweetened water, and repeated every three or four hours; in severe cases a table-spoonful may be taken.

COMPOUND TINCTURE OF HIGH CRANBERRY. Take of powdered High Cranberry Bark one ounce, powdered Lobelia Seed, bruised Skunk Cabbage seed, each, half an ounce, bruised Stramonium Seed, powdered Bloodroot, and Capsicum, each, two drachms, Alcohol two pints. Macerate for fourteen days, express, and filter.

This is a stimulating antispasmodic, and is useful in all nervous and spasmodic diseases, especially in hysterics, asthma, &c. The dose varies from twenty drops to a teaspoonful three times a day; or, during a paroxysm, it may be repeated as often as desired.

COMPOUND TINCTURE OF IODINE. Take of Iodine two drachms, Iodide of Potassium four drachms, Alcohol half a pint; mix together.

This Tincture may be employed internally, for all the purposes which Iodine is capable of answering. It does not decompose on the addition of water, as is the case with the simple Tincture of Iodine. The dose is six drops every four hours, gradually increased, if necessary, to twenty or thirty.

COMPOUND TINCTURE OF LAVENDER. *Compound Spirits of Lavender.* Take of Oil of Lavender three fluidrachms, Oil of Anise one drachm and a half, Cloves, in powder, one ounce, Mace three drachms, Red Saunders two ounces, Brandy four fluidrachms, Jamaica Rum one gallon. Mix, and macerate for fourteen days, express, and filter through paper.

This makes a much more agreeable compound than the formula usually given, and is equally beneficial. It may be used as an adjuvant and corrigent of other medicines, and as a remedy for gastric uneasiness, nausea, flatulence, hysteria, and general languor or faintness. Dose, from thirty drops to two teaspoonfuls in a little sweetened water.

COMPOUND TINCTURE OF LOBELIA. *Dr. J. King's Expectorant Tincture.* Take of Lobelia, Bloodroot, Skunk Cabbage, Wild Ginger, and Pleurisy root, each, coarsely powdered, one ounce. Place them in a vessel, cover with boiling water (or Vinegar) one pint, and cover tightly. When cold, add Alcohol three pints. Macerate for fourteen days, express, and filter through paper.

This forms an excellent emetic for children and infants, and may be safely used in croup, whooping cough, bronchitis, asthma, convulsions, and in all cases where an emetic is required. Also useful as an expectorant or nauseant in coughs, pleurisy, asthma, and whenever expectorants are indicated. The dose for an emetic varies from half a teaspoonful for a child from two to six months old to a table-spoonful for children from three to six years of age. It should be given in a little molasses and water, repeating the dose every ten minutes until vomiting is produced; warm water or Boneset tea will facilitate its operation. Smaller doses taken in an infusion of Slippery Elm will act as expectorants.

COMPOUND TINCTURE OF LOBELIA AND CAPSICUM. *Antispasmodic Tincture.* Take of Lobelia, Capsicum, Skunk Cabbage, each, in powder, one ounce, diluted Alcohol one pint. Mix, macerate for fourteen days, express, and filter through paper.

This is a very prompt and efficacious antispasmodic, highly beneficial in cramps, spasms, convulsions, lockjaw, hysteric convulsions during pregnancy, &c. The dose is from half a teaspoonful to a teaspoonful, every ten or twenty minutes, or as often as required. In convulsions and lockjaw, it may be poured into the corner of the mouth, and repeated as often as necessary; generally, the effect is almost instantaneous.

COMPOUND TINCTURE OF MYRRH. *Compound Tincture of Capsicum. Hot Drops.* Take of Myrrh, bruised, four ounces, Capsicum two ounces, Alcohol, four pints. Mix, macerate for fourteen days, and filter.

This is sometimes used as an external application in rheumatism, sprains, bruises, cuts, offensive ulcers, &c. Occasionally it is administered internally, in nausea, flatulence, dyspepsia, distress at stomach after eating &c., in doses of from half a teaspoonful to half a table-spoonful, in some sweetened water.

COMPOUND TINCTURE OF RHUBARB. Take of coarsely powdered Rhubarb two ounces; Golden Seal, Gentian, Prickly-Ash Berries, each, coarsely powdered, one ounce; Cardamom, Sassafras, each, bruised, half an ounce; add these to Diluted Alcohol, or Brandy, two and a half pints, let it stand for two weeks, frequently shaking, then express and filter.

This is an excellent aromatic tonic and laxative, and is useful in torpid liver, costiveness, weak digestion, and to strengthen the stomach and bowels after expelling worms, or recovering from diarrhea, &c. From half a teaspoonful to a table-spoonful, in sweetened water, may be taken every four or five hours; if it causes more than two mild evacuations from the bowels, lessen the dose.

COMPOUND TINCTURE OF SENNA. *Elixir Salutis.* Take of Alexandria Senna three ounces; powdered Jalap one ounce; Coriander, Caraway seed, each, bruised, half an ounce; Cardamom, bruised, two drachms; Diluted Alcohol three pints and a half. Mix, macerate for fourteen days, express, and filter. Useful in flatulency, and as a laxative for children, in doses of a teaspoonful for those a year old, in sweetened water.

COMPOUND TINCTURE OF TAMARAC. *Bone's Bitters.* Take of Tamarac bark, Juniper berries, each, three ounces, Prickly-Ash bark two ounces, Wild Cherry bark, Seneca Snake root, each, one ounce and a half, Tansy half an ounce; let these articles be coarsely powdered and mixed together. To the mixture add Whisky one pint and a half, and let them stand twenty-four hours; then place the whole in a vapor displacement apparatus, and force through the articles, the steam, or vapor, of additional Whisky one pint, after which, the steam from water sufficient to make the whole amount of tincture equal to twelve pints. To this add Molasses twelve ounces, and six drachms of Alcoholic Extract of Mandrake, which last must be thoroughly dissolved.

This preparation may also be made by adding the above herbs to Boiling Water nine pints and a half; digest by a gentle heat for twenty-four hours; then add the Molasses and two and a half pints of Whisky,—let them macerate for seven days, express, and strain; and then dissolve in the liquid the Alcoholic Extract of Mandrake.

This is an excellent alterative tonic, aperient, and diuretic; useful in dyspepsia, menstrual obstructions, and other diseases where such a combination of action is indicated. The dose is a table-spoonful, three times a day.

COMPOUND TINCTURE OF VIRGINIA SNAKE ROOT. *Sudorific Tincture.* Take of Virginia Snake Root, Ipecacuanha, Saffron, Opium, Camphor, each, in coarse powder, eight scruples, Holland Gin, or Diluted Alcohol, one pint; mix, macerate for fourteen days, express, and filter through paper. *H. Whiting.*

This tincture is a powerful sudorific, and may be used in all cases where a copious perspiration is required, or where it is desired to lessen pain, allay nervous excitability, procure sleep, and keep up a determination to the surface. The dose is from ten to sixty drops, in warm catnip or balm tea, and repeated every one, two, or four hours. When it is required to relieve severe pain, as in painful menstruation, cramp in the stomach, &c., or where copious perspiration is desired as in pleurisy, puerperal fever, &c., the doses may be increased to one or two teaspoonfuls.

ELIXIR VITRIOL. Into Alcohol half a pint, gradually drop Sulphuric Acid seven fluidrachms, and digest in a close vessel for three days; then add Ginger, in powder, two drachms; Cinnamon, in powder, three drachms; macerate for a week, and filter.

This is tonic and astringent, and is useful in diarrhea, dysentery, loss of

appetite, night-sweats, &c. The dose is from five drops to half a fluidrachm, in two fluidounces of water, and repeated three or four times a day. It will injure the teeth, unless the mouth be immediately washed, after taking each dose, with a solution of supercarbonate of soda, or saleratus.

TINCTURE OF ACETATE OF IRON. To Distilled Water, nine fluidounces, add pure Sulphuric Acid six fluidrachms, and in the mixture, with the aid of heat, dissolve Sulphate of Iron eight ounces, avoirdupois. Then add pure Nitric Acid half a fluidounce, first diluted with Distilled Water one fluidounce, and evaporate the resulting solution to the consistence of a thick syrup. Dissolve this in one quart of Rectified Alcohol; also dissolve separately, Acetate of Potassa eight ounces avoirdupois, in Rectified Alcohol one quart; mix these two solutions together, shake repeatedly in a large bottle, and then place the whole upon a calico filter. When any further liquid ceases to trickle through, subject the filter, with its contents, to expression, and, having cleared the turbid tincture thus procured by filtration through paper, let it be added to that already obtained. N. B. The above measures are Imperial.

This is a chalybeate tonic and astringent tincture, and is useful in all cases where such agents are required, in doses of from ten to sixty drops, well diluted with water. It may also be added to a sufficient quantity of water, and be injected into the vagina, for leucorrhea.

TINCTURE OF ACONITE ROOT. Take of Aconite Root, in powder, eight ounces, Alcohol one pint; mix, let them stand for two weeks, frequently shaking, express, and filter.

This tincture may be given in febrile and inflammatory diseases, and in all cases where Aconite is indicated. Three drops may be given every hour or two, in about a teaspoonful of water, and be increased or diminished in quantity and intervals, according to its influence. In large doses it is poisonous.

TINCTURE OF ARNICA. Take of Arnica Flowers an ounce and a half, Diluted Alcohol one pint; mix, macerate for two weeks, express, and filter.

This tincture may be used in all cases where Arnica is indicated, in doses of from five to thirty drops. It also forms a valuable external application to bruises, sprains, &c.

TINCTURE OF ASSAFETIDA. Take of Assafetida two ounces, Alcohol one pint; mix, macerate for two weeks, and filter. This possesses the medicinal virtues of Assafetida, and may be used in doses of from thirty to sixty drops.

TINCTURE OF BITTERSWEET. Take of the bark of Bittersweet root, in coarse powder, two ounces, diluted Alcohol one pint; mix, macerate for fourteen days, express, and filter.

This possesses the virtues of the Bittersweet bark, and may be used in all cases where this is applicable, in doses of from half a fluidrachm to two fluidrachms.

TINCTURE OF BELLADONNA. Take of recently dried Belladonna leaves one ounce, diluted Alcohol half a pint; mix, and let them stand for two weeks, frequently shaking, then express, and filter.

This may be used whenever Belladonna is indicated, in doses of from five to twenty drops, every three, four, or six hours.

TINCTURE OF BENZOIN. Take of Benzoin one ounce, Alcohol half a pint; mix, macerate for two weeks, and filter.

Used as a carminative and stomachic, also in mucous diseases of the throat and bladder, in doses of from ten to thirty drops, three times a day. It is also added to syrups, tinctures, &c., to improve their flavor.

TINCTURE OF BLACK COHOSH. Take of very finely powdered Black Cohosh root two ounces, Alcohol half a pint; macerate for fourteen days, express, and filter.

This Tincture possesses all the virtues of Black Cohosh, and may be used in various chronic diseases, pulmonary affections, rheumatism, derangements of the functions of the womb, nervous disorders, and wherever this medicine is indicated. The dose is from five to sixty drops, every one, two, or four hours.

TINCTURE OF BLOODROOT. Take of Bloodroot, in fine powder, three ounces, diluted Alcohol one pint; macerate for fourteen days, express, and filter.

This is an emetic in three or four fluidrachm doses. From ten to sixty drops will act as an expectorant and alterative, and will be found useful in affections of the lungs, stomach, and liver.

TINCTURE OF BLUE FLAG. Take of Blue Flag root, in powder, three ounces, Alcohol one pint; macerate for fourteen days, express, and filter.

This possesses the cathartic and alterative properties of the root, and may be given in doses of from ten to thirty drops, every four or five hours, in a little water.

TINCTURE OF CAMPHOR. Take of Camphor two ounces, dissolve it in Alcohol one pint.

This is used internally as a stimulant and antispasmodic, in doses of from five to thirty drops in some sweetened water. It is also employed as an external anodyne application in bruises, sprains, rheumatism, and other painful affections.

TINCTURE OF CAPSICUM. Take of Cayenne Pepper half an ounce, diluted Alcohol one pint; mix, macerate for fourteen days, and filter.

This is a useful and permanent stimulant, very useful in many low and depressed conditions of the system. Its dose is from five to sixty drops in water, every three or four hours. It is also used externally as a stimulating application to indolent ulcers, tumors, chronic inflammation of the eyes, painful affections, &c.; and is frequently used as a wash or gargle in ulceration of the throat, and falling down, or relaxation of the palate.

TINCTURE OF CATECHU. Take of Catechu one ounce and a half, bruised Cinnamon one ounce, diluted Alcohol one pint; mix, let them stand two weeks, frequently shaking; express and filter.

This is an astringent, and will be found useful in chronic diarrhea, &c. The dose is from thirty drops to half a table-spoonful, every two, three, or four hours in mucilage of Gum Arabic or sweetened water.

TINCTURE OF CHLORIDE OF IRON. *Tincture of Muriate of Iron.* Upon Subcarbonate of Iron four ounces in a glass vessel, pour Hydrochloric Acid half a pint, and when effervescence has ceased, apply a gentle heat,

and continue it, stirring occasionally, until the Carbonate is dissolved ; then filter, and add Alcohol one pint and a half.—U. S. PHAR.

This is a chalybeate tonic, diuretic, and astringent. It is useful in scrofula, gleet, old gonorrhea, leucorrhea, dysury depending on spasmodic stricture, passive hemorrhage from the uterus, kidneys, or bladder, and colliquative diarrhea. The dose is from ten to thirty drops, two or three times a day, diluted with a sufficient quantity of water. In doses of from ten to twenty drops in water, and repeated every two hours, it has been found a valuable agent in the treatment of erysipelas, usually effecting a cure in from two to six days, and during the employment of which, the only local applications necessary, are hair powder and cotton wadding; the bowels to be kept open. Externally, it has proved useful in destroying venereal warts; as a styptic and detergent in cancerous and fungous ulcers, and is one of the best applications that can be applied to a venereal chancre, for which purpose I have successfully used it since the year 1836.

TINCTURE OF CINNAMON. Take of Cinnamon, in powder, one ounce and a half, diluted Alcohol one pint; mix, let them stand for two weeks, frequently stirring; express and filter.

This is an astringent tincture, useful in diarrhea, dysentery, excessive menstruation, and hemorrhage from the womb. Dose from one to four teaspoonfuls in sweetened water, as often as required.

TINCTURE OF COLCHICUM SEED. Take of bruised Colchicum seed one ounce, Alcohol half a pint; mix, let them stand for two weeks, frequently shaking; express and filter.

This possesses the active virtues of the seed, and may be administered whenever Colchicum is required, in doses of from thirty drops to half a table-spoonful, two or three times a day, in a little water or mucilage. It is also used externally in rheumatic and other painful affections.

TINCTURE OF COTTON BARK. Take of the recently gathered inner bark of the Cotton root, coarsely bruised, four ounces, diluted Alcohol two pints; macerate for fourteen days, express and filter.

This tincture is useful in the various derangements of the menstrual discharge, as painful menstruation, suspended menstruation, and excessive menstruation; it is also useful to excite the contractions of the womb during labor, when these are weak. The dose is from twenty drops to a teaspoonful three or four times a day. Sometimes Sweet Spirits of Nitre is substituted for the diluted Alcohol in making this tincture.

TINCTURE OF DIGITALIS. Take of Digitalis, (*Foxglove*), one ounce, diluted Alcohol half a pint; macerate for fourteen days; express and filter.

This tincture may be used whenever Digitalis is indicated, in doses of from five to ten drops, every three, four, or five hours, carefully watching its effect, and ceasing its use whenever the pulse becomes lessened by it.

TINCTURE OF ERGOT. Take of coarsely powdered Ergot of recent growth, four ounces, diluted Alcohol two pints; macerate for fourteen days; express and filter.

This may be substituted for Ergot in powder, whenever desired, in doses of from half a teaspoonful to half a table-spoonful.

TINCTURE OF GELSEMINUM. Take of the fresh root of Yellow Jessamine, cut in slices, four ounces, diluted Alcohol, or Whisky, one pint; mix, let them stand two weeks; express, filter, and keep in well-stopped bottles.

This tincture possesses the virtues of the root, and is the form in which it is usually given. The dose varies from ten drops to a teaspoonful, every one, two, or four hours, according to its influence, and the circumstances attending each case.

TINCTURE OF GENTIAN. Take of Gentian, in powder, one ounce, diluted Alcohol one pint; macerate for fourteen days; express and filter.

This is a tonic Tincture, useful in weak digestion loss of appetite, dyspepsia, worms, &c. The dose is from half a fluidrachm to two fluidrachms, three times a day.

TINCTURE OF GINGER. Take of bruised Ginger two ounces; Alcohol half a pint; mix, and let them stand for two weeks, frequently shaking, then express and filter.

This a pleasant aromatic, useful in flatulency, weakness of the digestive apparatus, &c., and is frequently added to other preparations. The dose is from ten drops to a teaspoonful, in sweetened water, syrup, &c.

TINCTURE OF GRAINS OF PARADISE. Take of Grains of Paradise, bruised, one ounce; Alcohol half a pint; macerate for fourteen days, express and filter.

This tincture is a stimulant, acting somewhat similar to the tincture of Capsicum; its dose is similar to the latter, which may be advantageously substituted for it.

TINCTURE OF HEMLOCK. Take of Gum Hemlock one ounce; Alcohol one pint; dissolve the gum in the Alcohol, and filter.

This, as well as the essence of Hemlock, is stimulant and diuretic, and may be used in irritability of the stomach, nausea, vomiting, and in cases where the Turpentine diuretics are indicated. The dose is ten or twenty drops in sweetened water, every two or three hours, and in severe cases, every fifteen minutes, until relief is obtained.

TINCTURE OF HYOSCYAMUS. *Tincture of Henbane.* Take of Henbane leaves one ounce; diluted Alcohol half a pint; mix, let them stand for two weeks, express and filter.

This tincture is frequently substituted for Laudanum, especially when the latter does not agree with the person to whom it is administered; it relieves pain, and causes sleep, without occasioning costiveness. The dose is from twenty drops to a fluidrachm.

TINCTURE OF IODINE. Dissolve Iodine four drachms in Alcohol half a pint.

This tincture possesses the active properties of Iodine, but is rarely given internally, on account of its tendency to decomposition. It is more commonly used locally as an application to erysipelas, some diseases of the skin, indolent ulcers, chilblains, &c. The dose internally is from ten to twenty drops, in wine or water, three times a day.

TINCTURE OF LEPTANDRIN. Take of Leptandrin half an ounce;

Alcohol half a pint, to which add Aqua Ammonia, merely a sufficient quantity to take up the whole of the Leptandrin. The Ammonia must be added after the Alcohol has dissolved all the Leptandrin possible.

This is an aperient and cholagogue tincture, useful in various derangements of the biliary organs, in doses of from half a teaspoonful to half a table-spoonful, two or three times a day. It is less energetic than the tincture made from the powdered root, three ounces of which may be macerated in diluted Alcohol one pint.

TINCTURE OF LOBELIA. Take of Lobelia four ounces; distilled Vinegar, Alcohol, each, one pint; macerate for fourteen days, express and filter.

Half a fluidounce of this, or more, may be given to produce vomiting; from thirty to sixty drops to cause nausea and expectoration. Externally, it is beneficial as a local application in tetter, and similar cutaneous eruptions, and also in the poison by Rhus Toxicodendron upon the skin.

TINCTURE OF LUPULIN. Take of fresh Lupulin one ounce; Alcohol half a pint. Macerate for fourteen days and filter.

This is preferable to the tincture of Hops, and may be employed in after-pains, chordee, cough, and in all cases where Opium is inadmissible. The dose is one or two teaspoonfuls in sweetened water.

TINCTURE OF MUSK. Take of Musk one drachm; Alcohol one fluidounce; macerate for fourteen days, and filter.

This is a stimulant and anti-spasmodic preparation, useful in hysterics, hooping-cough, low fevers, and various spasmodic and nervous disorders. The dose is from twenty to sixty drops, three or four times a day. One fluidrachm of this tincture is equal to seven and a half grains of musk.

TINCTURE OF MYRRH. Take of bruised Myrrh one ounce; Alcohol twelve fluidounces. Let them stand for fourteen days, frequently shaking, and then filter.

This is generally used externally as a stimulating application to spongy gums, ulcerations of the mouth and throat, obstinate ulcers, diseased bones, &c. Sometimes it is used in chronic, dry cough, and in suppressed menses, in doses of from half a teaspoonful to a teaspoonful.

TINCTURE OF NUX VOMICA. Take of rasped Nux Vomica two ounces; Alcohol half a pint. Let them stand for fourteen days, frequently shaking, then express and filter.

This tincture is seldom used alone on account of its bitterness. It possesses the active properties of Nux Vomica, in doses of from five to fifteen drops. Combined with equal parts of the tinctures of Blue Flag and Mandrake, in doses of twelve or fifteen drops, three times a day, it is efficacious in obstinate constipation, gleet, stricture of the urethra, impotence from masturbation, and recent disease of the prostate gland.

TINCTURE OF OPIUM. *Laudanum.* Take of good Turkey Opium one ounce and two drachms; slice it, and pour upon it boiling water four fluidounces, and with the hand or pestle reduce it to an emulsion; then pour it into a bottle, and rinse the pestle or hand with one fluidounce of warm water, which add to the above, together with Alcohol of 76 per cent.

ten fluidounces. Agitate well, and set it aside; in twenty-four hours it will be of full strength.

This tincture may be used for all purposes in which Opium is indicated, in doses of from ten to thirty drops. If Vinegar be employed in the above, instead of water, it forms a much better tincture, and less liable to vary in strength.

TINCTURE OF PODOPHYLLIN. Take of Podophyllin one drachm; Alcohol half a pint; mix, and dissolve the Podophyllin.

This tincture may be used in all cases where Podophyllin is indicated. The dose is from ten to sixty drops every two, three, or four hours. A full purgative dose will not require repetition for several days, unless demanded by the exigencies of the case.

TINCTURE OF POISON HEMLOCK. *Tincture of Conium Maculatum.* Take of the recently dried leaves of Poison Hemlock three ounces; diluted Alcohol one pint. Macerate for fourteen days, express and filter.

This is a discutient and alterative preparation, and may be used both internally and externally, to remove glandular and visceral enlargements; it is likewise an anodyne and antispasmodic. It has been found useful in scrofula, diseases of the skin, tumors of various kinds, bronchocele, hooping-cough, chorea, asthma, troublesome cough, &c. The dose is from twenty to sixty drops, two or three times a day, gradually increased, if necessary.

TINCTURE OF POKE. Take of Poke Root, in powder, two ounces; diluted Alcohol one pint; macerate for fourteen days, express and filter.

This tincture may be used in all cases where the influence of Poke is desired, in doses of from twenty to sixty drops, three or four times a day.

TINCTURE OF PRICKLY-ASH BERRIES. Take of Prickly-Ash berries four ounces; diluted Alcohol one pint; macerate for fourteen days, express and filter.

This is an excellent stimulating and carminative tincture, and may be used in Asiatic cholera, low stages of fevers, tympanitis, &c. The dose is from one to four fluidrachms every ten or twenty minutes, or every hour or two, according to the urgency of the case, and the effects produced. It gives tone to diseased and relaxed mucous tissues.

TINCTURE OF PRICKLY-ELDER. Take of Prickly-Elder, in powder, one ounce and a half; diluted Alcohol half a pint; macerate for fourteen days, express and filter.

This is stimulant, tonic and alterative, useful in chronic rheumatism, colic, flatulency and cholera. The dose is from ten to sixty drops, three or four times a day.

TINCTURE OF RHATANY. Take of powdered Rhatany root, three ounces; diluted Alcohol one pint; macerate for fourteen days, express and filter.

This is an astringent, and may be used in diarrhea, and hemorrhages from the stomach, bowels, or womb, in doses of one or two fluidrachms, repeated as often as required. Externally, it forms an excellent local application to the gums, where they are tender, spongy, and bleed.

TINCTURE OF SHEEP LAUREL. Take of Sheep Laurel leaves, in

powder, three ounces; diluted Alcohol one pint; macerate for fourteen days, express and filter.

This a sedative tincture, and possesses antisyphilitic properties. It has been efficacious in jaundice, syphilitic diseases, palpitation of the heart, neuralgia of the eye, &c. The dose is ten drops, carefully and gradually increased to thirty. Externally, it forms an excellent application to itch, syphilitic ulcers, and some skin diseases.

TINCTURE OF SHRUBBY TREFOIL. Take of Shrubby Trefoil, in coarse powder, two ounces; diluted Alcohol one pint; macerate for fourteen days, express and filter.

This is an excellent tonic, possessing all the properties of the bark of the root from which it is obtained. The dose is from half a teaspoonful to two teaspoonfuls three times a day.

TINCTURE OF SPANISH FLIES. *Tincture of Cantharides.* Take of Spanish Flies, in coarse powder, half an ounce; diluted Alcohol one pint; mix, let them stand for two weeks, express and filter.

This is used in chronic leucorrhea, suppressed menstruation, gleet, and some urinary derangements; externally used as a rubefacient. Dose from ten to sixty drops, three or four times a day.

TINCTURE OF STRAMONIUM. Take of Stramonium seed, bruised, three ounces; diluted Alcohol one pint; mix, let them stand for two weeks, express and filter.

This may be used for all the purposes for which Stramonium is given, in doses of from ten to forty drops, two or three times a day, gradually increased till it affects the system.

TINCTURE OF TOLU. Dissolve Balsam of Tolu one ounce and a half, in a pint of hot water, and filter.

This is useful in cough, and chronic catarrh, and is often added to expectorant and other mixtures, intended to influence mucous tissues. The dose is from half a teaspoonful to two teaspoonfuls, in sweetened water, three or four times a day.

TINCTURE OF TOXICODENDRON. Take of the recently collected Leaves of Poison Oak two ounces, Alcohol one and a half fluidounces; mix, let them stand for two weeks, express, and filter.

This is a narcotic and stimulant, and should be used with great caution. It has been used in obstinate diseases of the skin, chronic rheumatism, paralysis, &c. The dose is three drops, in water, three or four times a day, gradually increased to ten drops. It must be kept in well-stopped vials.

TINCTURE OF WHITE HELLEBORE. Take of the fresh Root of White Hellebore, cut in slices, three ounces, diluted Alcohol one pint; macerate for fourteen days, express and filter; and keep in well stopped bottles.

This tincture possesses the virtues of the root, and is much used in febrile and inflammatory diseases; it reduces the pulse, lessens inflammatory action, and allays pain. The dose is three drops, every hour or two, gradually increased to five or ten, or until some effect is produced.

TINCTURE OF YARROW. Take of the leaves of Yarrow three

ounces, diluted Alcohol one pint; macerate for fourteen days, express, and filter.

This is a tonic and astringent, and may be used in chronic diarrhea and dysentery, weak stomach, diabetes, excessive menstruation, bleeding from the lungs, flooding, &c. The dose is from a teaspoonful to a table-spoonful, three or four times a day, or as often as required. A few drops of Oil of Anise, or Oil of Cinnamon, will remove the unpleasant taste of this tincture.

VOLATILE TINCTURE OF GUAIACUM. (*Dewees.*) Take of Guaiacum, in powder, ten ounces, Carbonate of Soda, or of Potassa forty-five grains, Allspice, in powder, half an ounce, diluted Alcohol one pint. Macerate for seven days, and filter. When to be used, to each fluidounce of the tincture, add fifteen or thirty drops of Aqua Ammonia.

This is used sometimes in painful menstruation, and suppressed menstruation. The dose is a teaspoonful, three times a day, in wine or milk.

VINEGARS.

THESE are fluid preparations, consisting of vinegar impregnated with various medicinal substances, to which a small quantity of alcohol is usually added, to prevent them from spoiling. They should be made of distilled Vinegar, and in small quantities at a time, on account of their liability to change.

VINEGAR OF LOBELIA. Take of powdered Lobelia seed two ounces, distilled Vinegar one pint; macerate in a close glass vessel for seven days; then express, filter, and add Alcohol one fluidounce.

This is used as an emetic, nauseant, and expectorant; also as a relaxant in spasmodic affections; externally, it is valuable in diseases of the skin. The dose is from one to four teaspoonfuls, repeated as required.

VINEGAR OF SQUILL. Take of Squill, sliced, two ounces, distilled Vinegar one pint, macerate in a close glass vessel for seven days; then express, strain, and add Alcohol one fluidounce.

This is an expectorant and diuretic, and is occasionally used in cough, diseases of the chest, and dropsy, in doses of from ten to sixty drops, three or four times a day. The Syrup of Squill is the best form for use.

MISCELLANEOUS.

THE character of several popular nostrums is herein given, that they may be understood by the community; they are not recommended, however, for use.

BUTE'S RHEUMATIC LINIMENT. Take of Oil of Turpentine, Tincture of Camphor, Olive Oil, Oil of Amber, Beef's Gall, each, one fluidounce; Aqua Ammonia, Oil of Juniper, each, one fluidrachm; mix.

BRANDRETH'S PILLS. Take of Aloes two pounds, Gamboge one

pound, Extract of Colocynth four ounces, Castile Soap half a pound, Oil of Peppermint two fluidrachms, Oil of Cinnamon one fluidrachm. Mix, and form into pills.

CONKLIN'S SALVE. Take of Resin twelve ounces, Beeswax, Mutton Tallow, each, one ounce; melt together, strain, and work it into rolls in cold water.

WHITWITH RED DROPS. Oil of Thyme four fluidrachms, Tincture of Camphor two fluidrachms, Tincture of Myrrh, Essence of Lavender, each, two fluidrachms, Alcohol half a pint. Dose, twenty-five drops.

LORD'S SALVE. Mutton Tallow one pound, Beeswax, White Turpentine, each, half a pound; melt together, and add finely powdered Verdigris one table-spoonful.

SWEET'S SALVE, OR STRENGTHENING PLASTER. Take of Bole Armenia, Nitre, Camphor, each in powder, one ounce; mix together, and add to the following articles melted together; Rosin eight ounces, Beeswax two ounces; work in cold water.

WHITE'S PLASTER. Melt together White Rosin three pounds, Mutton Tallow, Beeswax, Burgundy Pitch, of each four ounces, strain, and add British Oil, Cedar Oil, Camphor, of each half an ounce, W. I. Rum one gill. Work in cold water into rolls.

TRIPP'S PECTORAL BALSAM. Take of Tincture of Balsam Tolu twelve fluidounces, Balsam of Canada six ounces, Oil of Anise three fluidounces; mix.

ANODYNE BALSAM. White Spanish Soap one ounce, Opium two drachms, Alcohol nine fluidounces; digest at a gentle heat in a close vessel, for three days, strain, and add powdered Camphor three drachms.

BLACK OIL. For removing callous tumors, &c., in horses, also corns, warts, &c. To Oil of Spike one fluidounce gradually and carefully add Sulphuric Acid one fluidounce; when mixed add Olive Oil half a gill.

HIBBEN'S NERVE AND BONE LINIMENT. Take Oil of Origanum, Oil of Rosemary, each, one pound, Olive Oil two pounds, Tincture of Spanish flies, Oil of Turpentine, each, half a pound, strong Tincture of Camphor one fluidounce; mix.

HUNTER'S RED DROP. Take of Corrosive Sublimate ten grains, Muriatic Acid twelve drops, Compound Spirits of Lavender one fluidounce. The dose is five, ten, or twenty drops in water, or white wine, sufficient to produce one evacuation daily, but not over two. Sometimes Antimonial Wine is substituted for the Spirits of Lavender. It is an improper medicine, originally taken from "Marryatt's Therapeutics."

AYER'S CHERRY PECTORAL. Take of Acetate of Morphia four grains, Tincture of Bloodroot two fluidrachms, Antimonial Wine, Wine of Ipecacuanha, each, three fluidrachms, Syrup of Wild Cherry three fluidounces; mix.

KITRIDGE'S COUGH DROPS. Take of Lobelia Seed, Bloodroot, each, in powder, eight grains, Ipecacuanha, Capsicum, each, five grains; add water and spirits, equal parts of each, and simmer to one gill; then add half a gill of honey, and of cider, and when cold add powdered Opium, Camphor, each, five grains. Dose, a teaspoonful three or four times a day.

MACKENZIE'S SYRUP FOR CONSUMPTION. Take of Colombo, Hoarhound, each, two ounces, Boneset one ounce, Pleurisy root four ounces, water one gallon. Mix, and boil slowly to one gallon; add sugar five pounds, Canada Balsam one pound, Liquid Storax eight ounces, Wheat Bran two pints. Simmer the whole slowly for two hours, add one pound of Beeswax; let the mixture stand for twenty-four hours, strain, and add yeast one pint. Allow the whole to stand for use, and bottle. Dose, half a table-spoonful four or six times a day. A very heterogeneous compound!

GERMAN CHOLERA MIXTURE. Take of Geranium one pound, Gentian, Elecampane, Angelica root, each, two ounces, Valerian, Aniseed, each, one ounce, Rue three drachms, Camphor, Saffron, each, two drachms, Canada Fleabane one drachm, Brandy one gallon. Mix and digest for ten days. Dose, from half a table-spoonful to a table-spoonful every fifteen or thirty minutes.

SWEET'S RHEUMATIC WASH. Take of Winter Green, Bayberry bark, Wild Indigo Root, each, half a pound, new Rum two quarts, boil to one quart, strain, and add Oil of Turpentine half a gill, Vinegar one gill.

MACKENZIE'S OINTMENT. For tetter, scald-head, and other diseases of the skin. Take of powdered Sulphate of Zinc four ounces, Liquid Storax one ounce, Lard one pint; mix, and boil slowly for one hour, stirring all the time. To be applied twice a day, washing the part with Castile soap suds daily.

FAHNESTOCK'S VERMIFUGE. Take of Castor Oil, Oil of Wormseed, each, one fluidounce, Oil of Anise half a fluidounce, Tincture of Myrrh half a fluidrachm, Oil of Turpentine ten minims, Croton Oil one or two drops; mix.

TURLINGTON'S BALSAM. Take of Benzoin three ounces, Liquid Storax one ounce, Socotrine Aloes, Myrrh, each, two drachms, Balsam Peru, Balsam Tolu, Extract of Liquorice, each, half an ounce, Angelica root one drachm, Alcohol one pint. Mix them together, let them stand for ten or twelve days, frequently shaking, and then strain.

KING'S MEDICINE CHEST.

**For Families, Plantations, Ships, Steamboats,
Hotels, &c.**

FOR the benefit of the subscribers to the present work, I would state that this Chest is prepared for the use of persons who are not situated so as to conveniently obtain the medicines herein named, and which may be had of Dr. F. D. Hill, corner of Race and Fifth streets, Cincinnati, O., who alone is authorized to manufacture them for sale, and who will, likewise, furnish such medicines from time to time as may be ordered. Persons sending their orders to him for the Medicine Chest, will be particular in giving directions, naming the town, county, State, and how to forward—clearly and distinctly.

There are two sizes of the Medicine Chest, one for \$25, the other for \$40; the Chest is compact and strongly made; the vials are strong and well corked, and all the articles are properly labelled. Persons can have any medicines they desire added to those already in the Chest, at a reasonable advance.

The \$25 Chest contains the following:

IN 8 OZ. VIALS.

Fluid Extract of Rhubarb and Potassa, or *Neutralizing Cordial*.
Compound Capsicum Liniment, or *Rheumatic Liniment*.
Compound Powder of Jalap, or *Antibilious Physic*.
Powdered Leptandra (*Black root*).
Bi-carbonate of Soda.
Castor Oil.
Antiperiodic Tincture, in the proportion of *Quinia ten grains, Elixir Vitriol one fluidrachm, and Tincture of Black Cohosh fourteen fluidrachms*.

IN 4 OZ. VIALS.

Fluid Extract of Spigelia and Senna.
Compound Tincture of Myrrh, or *Hot Drops*.
Compound Tincture of Lobelia, or *King's Expectorant Tincture*.
Tincture of Prickly Ash Berries.
Compound Powder of Lobelia, or *Emetic Powder*.
Essence of Peppermint.
Cough Drops.
Powdered Rhubarb.
Flowers of Sulphur.
Laxative Powder, composed of *Podophyllin one part, Leptandrin two parts, Cream of Tartar twenty parts*.

IN 2 OZ. VIALS.

Compound Tincture of Lobelia and Capsicum, or *Antispasmodic Tincture*.
Compound Tincture of Virginia Snakeroot, or *Sudorific Tincture*.
Powdered calcined Deer's-horn.

Paregoric.

Tincture of Camphor.
Tincture of Gelsemium.
Laudanum.
Tincture of Assafetida.
Powder, composed of *equal parts of Blue Cohosh and Golden Seal*.

IN 1 OZ. VIALS.

Compound Powder of Ipecacuanha and Opium, or *Diaphoretic Powder*.
Camphor.
Geraniin.
Mild Vegetable Caustic.
Tincture of Aconite root.
Tincture of Arnica.
Tincture of Muriate of Iron.
Sulphate of Quinia.
 $\frac{1}{2}$ drachm, Sulphate of Morphia.
 $\frac{1}{2}$ drachm, Dioscorein.

ALSO IN POTS, &c.

$\frac{1}{2}$ lb. Resin Plaster, (*Adhesive, on cloth*.)
 $\frac{1}{2}$ lb. Compound Tar Plaster, (*Irritating*.)
 $\frac{1}{4}$ lb. Compound Lead Ointment, (Mayer's.)
2 oz. Compound Ointment of Oxide of Zinc, (*Mild Zinc*.)
100 Antidyspeptic Pills.
Box of Scales and Weights.
1 oz. glass graduate Measure.
 $\frac{1}{2}$ lb. Lint.
1 Spatula.
1 pint Syringe.
2 oz. Syringe.
1 Gum elastic Catheter.

PART IV.

HYDROPATHIC APPLIANCES.

INTRODUCTORY REMARKS.

DRY details of the successive steps by which water has attained its present popularity as a remedial agent are uninteresting to the majority of those for whom these pages are intended. Priessnitz was an original man and has been a benefactor to his race, by his development of the remedial powers of water. Yet, to other minds, more learned and comprehensive, the public are indebted for improved processes and correct principles of action. Weiss, Rausse, Richter, Preifs, &c., in Germany; Wilson, Gully, and Johnson, in England; Shew, Trall, Nichols, and others, in the United States, have added much to the stock of general knowledge in this direction.

From the use of excessive cold water and long-continued baths, progress has been made to a milder and safer method of treatment. More attention has been paid to the adaptation of the bath to the peculiar constitution and symptoms of each patient. As no two persons are alike, variations in the temperature, form, and duration of the bath are required to render the treatment of disease either judicious or rational. At one time, the wet sheet pack was continued with nearly every patient till perspiration was induced; as a natural consequence, nervous and debilitated patients were prostrated by its lowering effects upon the system. Experience taught the same thing in regard to the use of the douche, plunge, &c. It became evident that to render the use of water universally beneficial, more attention must be paid to an analysis of the symptoms of each case, and the relations which the different modes of using water bear thereto.

In the following pages, an attempt has been made to give in as full and complete a manner as the limited space would allow, a description of the different methods of using water and the principles which govern their employment in the treatment of disease—combining the results of several years' experience in the treatment of both acute and chronic disease, with the published observations of the best Water-Cure practitioners of England and Germany. Use and adaptability to the wants of the people were the objects aimed at, in the preparation of the following pages.

W. S. B.

TOWEL OR SPONGE BATH.

In the treatment of acute disease, this form of bathing has been most generally used, from its simplicity and availability. In chronic disease, where the vitality of the patient is very low, and the skin comparatively bloodless, it is generally the first means employed to cleanse the skin and increase its action. By the increased flow of blood to the surface it produces, the system is prepared for the more severe and thorough baths.

Persons who are much reduced in physical vigor, may bathe part of the body first, as the head, face, arms, and chest, drying and applying thorough friction with a dry towel or the dry hand, before bathing the rest of the body. Also in fevers or other acute diseases, this form of sponging the patient's body, practiced by the nurse, is often better than exposure of the whole surface.

The *temperature* of the water used must be governed wholly by the vigor of the patient, in chronic disease; it being often necessary to commence with water at 85° or 90°, gradually reducing it to cool or entirely cold water, as the patient may be able to bear; or substituting other forms of bathing in its stead.

The cold sponge-bath quickly applied, is a very valuable remedy in the night-sweats of consumption, and the clammy sweats which so often appear during convalescence from intermittent and other fevers. The patient who wakes and finds himself in a cold, clammy sweat, by immediately rising and washing over the whole surface with a towel or sponge dipped in cold water, drying as usual, and putting on dry night-clothes, will most generally be able to entirely check that disagreeable symptom and avoid its prostrating effects. Cold sponging, is tonic, and stimulant to the skin, thus antagonizing the debility of which night-sweats are but symptomatic.

In acute disease, when the object is to allay fever, I have found water at a temperature of 75° or 85° better to reduce the fever, than colder water. For, while in chronic disease, it is desired to excite action of the skin, in febrile attacks the design is to modify the excited action already existing, cleanse the skin, and hasten perspiratory action.

Persons whose motto has been:—"Cold water—the colder the better"—have been very much surprised, after the application of cold water, to find in a short time a new accession of fever.

Having the principle above named in view, a judicious nurse will continue the *tepid* bath till the feverish action is reduced. In convalescence from fevers and other debilitated states, the same principle and course must be adopted as in chronic diseases characterized by debility—the object being to stimulate the skin and the nervous and arterial systems.

Some sit or stand in an empty wash-tub or half-bath tub, and with a large sponge well filled with water, make it pass freely over the different parts of the body. Or, the patient may pour water over himself.

This is mild, but more stimulating than the towel bath.

WASH-DOWN.

This is a form of towel bath, given with the assistance of an attendant; both the subject and the operator being engaged in its administration.

The patient stands in a bathing-tub during its application. The towels are used dripping wet, and are rewet and reapplied several times if desired. It is used mainly in various stages of chronic disease.

AFFUSION.

The patient standing in an empty bathing-tub, has an assistant pour water over the neck, chest, and shoulders, from a pail or pitcher. It is a very good form for general bathing; and is very useful to cool the body in febrile and inflammatory conditions. The quantity of the water and the temperature used vary according to the necessities of the case.

Dr. Currie of England employed it very extensively in a great variety of febrile diseases, such as typhus and scarlet fever, small-pox, measles, tetanus, convulsions, &c.

THE WASH-TUB BATH.

Fig. 73.



Wash-Tub Bath.

In domestic practice, is a convenient and invaluable resort, in the treatment of febrile conditions of the system. Fill a tub a third or half full of water of the proper temperature, in which place the patient, having his feet in a smaller tub or pail containing similar proportions of water. The patient, if able, may wash himself, with the aid of one attendant; but if feeble or suffering from any prostrating disease as typhoid fever, should have two bath-attendants and remain quiet himself. The body and limbs can be thoroughly washed, pouring occasionally water of the same temperature upon and over the shoulders and body to effect a

more thorough cooling of the system. As a general rule, *tepid* water, ranging from 72° to 85° or 90° , is best, being less liable to produce a return of the febrile action of the skin. The bath may be given from two to five, ten or fifteen minutes, according to the strength of the patient and height of the fever. But it should not be prolonged so far as to produce chilliness or blueness of the nails and pallor of the skin which indicate the reflow of the blood to the internal organs. Dry with towels or the dry rubbing sheet, which protects the body of the patient from the action of currents of air and renders him less liable to chill.

In the treatment of fever, should it return, the bath may be again resorted to till the feverishness is reduced. It is very useful in the treatment of the eruptive fevers, in bilious remittents, the hot stage of intermittents, and in hectic and typhoid fevers. It is also an appropriate bath after the wet-sheet pack where that is administered in chronic affections; when, it may be used of a cooler temperature, or followed by the pouring of a pailful of cooler water over the shoulders of the patient, to tone up the skin after it has been thoroughly cleansed by this process.

It cleanses the surface, reduces the excessive heat of the system, and possesses also a derivative effect upon the circulation from the head, lungs, and heart, to the lower abdomen and extremities, antagonizes congestion of those organs and soothes the nervous system.

THE RUBBING OR DRIPPING SHEET.

This is of such general availability in home practice, and applicability to various diseases and states of the system, that it proves one of the most useful measures in the whole list of Water-Cure processes.

Take a coarse linen or cotton sheet—well-wrung, if you wish it for a rubbing-sheet—loosely wrung for a dripping-sheet; throw it quickly about the patient's body, from behind, and let the patient and attendant both rub briskly over the sheet for one, two, three, or four, or more minutes, until the surface becomes thoroughly warm. Follow it with the dry sheet, and towel and hand-rubbing.

It is a very pleasant and useful form for general bathing, and as described above is very generally used in the treatment of chronic disorders, during all stages, but more especially in the earlier, when only the milder appliances of Water-Cure can be borne.

Used as cool as it can be borne and secure proper reaction, it is a tonic and stimulant. The blood-vessels of the skin contract on the first application of the sheet, and subsequently relax, with an increased flow of blood into their calibre—which double action is increased by the friction, until a good amount of blood is fixed in the skin, as seen by the glow produced by a bath of proper length and temperature. Thus congestion of the internal organs, the brain, lungs, stomach, liver, &c., is antagonized by an increased action of the skin, and the nervous system also is soothed or stimulated, and a corresponding equilibrium produced. It takes off languor, gives new vigor to mind and limb, removes feverish thirst, generates appetite, &c. It is often very useful in spasmodic and neuralgic affections of the limbs and trunk. With feeble patients, it is best to commence with a sheet of mild temperature, from 80° to 90°, gradually reducing it as the vigor of the system is increased. When the sedative or soothing effect is wished, mild temperatures must be used. But when used for the purpose of invigoration and stimulation of the nerves of the vegetative system and brain, or for reducing their painful or spasmodic affections, it should be cool or cold and of longer duration—the sheet being re-wet and re-applied several times in succession. For feverish pulse and heat in chronic disease the dripping-sheet taken at bedtime, of a mild temperature and short duration, induces sleep by relieving the brain from the irritation of the skin, and thus allaying nervous excitability.

As a remedy for the febrile stage of acute attacks, the dripping sheet, repeated as many times as necessary, is very useful. It should be tepid or slightly cool to produce this sedative or febrifuge effect. It is valuable in all cases where a strong diversion to the skin from the mucous membrane of the alimentary canal or from the internal viscera is needed, as in the early stages of diarrhea, dysentery, cholera, colic, &c. It is one of the best forms of bath to follow the wet-sheet pack. Is valuable in mental diseases in case of brain-exhaustion, some forms of insanity, nearly all spasmodic and epileptic conditions, &c.

A short, cool bath of this kind, taken at bedtime, will often prevent night-sweats in those who are afflicted with them.

Fig. 74.



Rubbing Wet Sheet.

In this case as in other forms of general bathing, the patient should wash his face, and wet his head in cold water, before taking it.

When patients are too feeble to stand while taking this bath, they may sit on a stool and have a sheet thrown over them, following out in other respects the directions given above. And, in cases of great prostration, having spread under the patient a woollen blanket, the sheet well wrung may be applied, while lying upon the side, thus bathing one side at a time, and preserving the strength of the patient. Thus applied, it rallies the feeble powers of the system and hastens convalescence more than can be effected merely by the use of the towel or sponge-bath.

PAIL DOUCHE.

This is a far more stimulating bath than the preceding, as a greater body of water comes in direct contact with the system, and by the shock produced, excites greater nervous action.

The patient stands in an empty bathing-tub, and the attendant having prepared two pails of water, one five or ten degrees milder than the other in temperature, dashes the warmest pailful half upon his chest, half upon his back, following with the second pailful in the same manner; then dries and uses friction as in other forms of general bathing.

It is not advisable to use it in cases of great nervousness, as it gives too great a shock to the over-excited, sensitive nerves and adds to the nervous derangement already existing. More sedative appliances, as the rubbing wet-sheet, short tepid half-baths, &c., are indicated in such cases. Nor is the pail douche advisable where there is serious disease of the heart or lungs, especially in the latter case, as its use tends to the too sudden stimulation of the circulation in the thoracic organs, and may produce fatal hemorrhage from bursting of the cell-structure of the lungs. It is mostly used where the temperament is sluggish, or, the lungs comparatively sound and vigorous, the disease being of a general nature, or, if local, affecting other parts of the system. It is stimulant, tonic, and alterative.

THE HALF BATH.

The bathing-tub for this bath may be made of wood or tin. (For form of tin or copper half-bath tub, see Fig. 74.) Priessnitz's half-bath tubs were made of wood, four or five feet long, about two and a half feet wide, and twenty inches deep. The ordinary bathing-tubs made of tin, about five and a half feet long at top and four and a half at bottom, two and a half feet wide at top and one and a half at bottom, and one and a half feet deep, is, perhaps, the best form. A valve is placed in the bottom, through which the water escapes from the bath tub.

When but four inches of water are put into the tub, it forms the *shallow bath* of the English practitioners. It is milder in its effects, than when a greater depth of water is used. The usual depth is from six to ten inches. Having filled the tub to the depth desired, with water of appropriate temperature, the patient seats himself in it, with his lower limbs immersed, rubs his chest and limbs vigorously, while the bath attendant is busily at work behind; continuing the process for the length of time demanded by the severity of the case. When there are two bath-attendants, one rubs the back

and body, the other the extremities. In ordinary cases, the length of the bath will last from two to ten minutes, varying with the reactive ability of the patient and the coldness of the water.

It is a more powerful stimulus than the rubbing wet-sheet, as the constant bathing brings a larger amount of water in contact with the surface. More heat is extracted, and greater reaction, especially to the feet, is secured. It is well adapted to the majority of chronic patients, and to those who have been under treatment for some time and are able to react against a more powerful impression than that given by the sponge-bath or rubbing sheet.

The temperature of the bath is a matter of much importance; for, if given to feeble patients too cold, a feeble reaction takes place, and the blood, instead of being called to the skin, is repelled from it, and more or less congestion of the internal viscera results. When given too warm, a relaxed, bloodless, and flabby state of the surface is induced. Some practitioners use the hot full half-bath, of a temperature as hot as can be borne, and a duration of from fifteen minutes to an hour, as an alterative in chronic nervous rheumatism, dyspepsia complicated with disease of the liver, and some forms of uterine disease. But the long-continued application of a high heat to the surface, debilitates the skin, and depresses the nervous system, so that the most robust patients do not regain their wonted vigor for several days, and others of a more nervous constitution, by one injudicious application of this bath, have had their hopes of returning health completely dispelled.

When given alone as a morning bath, the design is to keep up a healthy circulation on the surface, and for this purpose, the bath should be as cold as the individual can bear and secure a thorough reaction. The best time for this to be taken is immediately on rising in the morning, when the circulation of the system is generally best equalized, or at ten o'clock in the forenoon, at which time the system seems to reach the acme of physical vigor.

It is one of the most appropriate forms of bath after sweating in the blanket pack or with the wet sheet pack, and also after the vapor-bath. Its object is to restore the tone of the relaxed capillaries, to powerfully stimulate the whole system, and to arouse to action the secretory organs, as well as to call the blood to the lower extremities. Thus it is tonic, stimulant, and alterative, each effect harmonizing with a healthful secretion, and with each other.

When used of a cool or cold temperature, the bath should be of a shorter duration than when used of a higher temperature. It is often advantageous to give a half-bath of four or five minutes' duration, of a temperature of from 80° to 90° , then reduce the temperature ten degrees, and continue the bath one minute, or follow it with a pail-douche of one pail of water, ten degrees lower than that of the half-bath, thus securing better reaction and more stimulation than would have been the case with the employment of a colder temperature at first. It should be discontinued at any time when the patient chills, and does not react in the bath, and the circulation should be restored by vigorous friction.

In the treatment of acute diseases, it is not so much used, as it would be were each family to provide itself with a proper bathing tub for its administration. Its object in these cases, is, instead of stimulating and exciting the system to violent reaction, to soothe, relax, and reduce the heightened inflammatory action of the body, and at the same time produce an equalization of the circulation. To do this, the temperature of the bath should vary from 75° to 80° , and the duration from ten minutes to an hour, according to the strength of the patient and the severity of the fever. As

remarked heretofore, too cold a bath will depress the life-powers, or will call forth more vigorous action, and increase the fever. Prudence, rather than heroic treatment, will secure the best results. No more appropriate agent can be found for safely and surely controlling inflammatory conditions of the body, than the tepid half-bath. It is invaluable in the treatment of the hot stage of intermittents, inflammation of the abdominal and thoracic viscera, eruptive, remittent and typhoid fevers. Of a temperature varying from 65° to 90° , it is successfully used in the treatment of mineral diseases, mercurial affections of the joints, sick headache, apoplectic and congestive fulness of the brain, epileptic, paralytic and hysterical affections, in "sun stroke," intoxication, delirium tremens, acute insanity, &c.

WET SHEET PACK.

Fig 75.



Wet Sheet Pack.

This remedy can be had at all times and places. It is only necessary to have an ordinary supply of common bedding and water. The sheet for packing is of cotton, or coarse linen, sufficiently long to reach from the patient's head to the soles of the feet, and two yards in width. In feeble chronic cases it is better to have it come not quite to the ankles. The bed is then stripped of its covering, one or two pillows being left for the patient's head. One or two comfortables are then spread evenly upon the bed, and upon these two woollen blankets are in like manner spread. The blankets are not so much injured from wet as cotton comfortables, and by their contiguity to the wet sheet which is placed upon them, they secure a better reaction. In cases of much debility, the reactive powers are feeble, and the nervous system liable to irregular action; hence the patient, though the skin may be warm to the touch, will complain of chilly sensations up and down the spine, thence running over the whole surface, which are very unpleasant, render him uneasy and fidgety, and counteract the favorable results which ordinarily follow its use. To prevent this, place a folded towel, or strip of flannel, of four thicknesses, three or four inches wide, next the spine, as the patient reclines upon the sheet. This saves the spinal nervous system from the shock it would otherwise receive, and secures a pleasant and fine reaction. In such cases, as well as in all cases where the patient is liable to coldness of feet, he should have a jug or can of hot water, or hot bricks, placed to the feet, as the sheet and blankets are wrapped around them, having one or two thicknesses of the blanket between, to protect the feet from contact with too high a heat. The patient, having undressed, reclines at full length upon his back on the sheet, and raises his arms, while the assistant laps one side of the sheet over the body and lower limbs, and tucks it closely to the body; the arms are then dropped by the side—never crossed over the chest—and the other side quickly lapped and tucked; the blankets and comfortables are brought over and tucked in the same manner, care being taken not to draw them too closely over the chest, as oppression and sense of suffocation might be produced by so doing. The packing clothes should, also, be snugly tucked around the neck and under the shoulders, so that the heat developed by the body may be retained. When

well done, the moist heat retained near the surface acts as a solvent of the morbid material in the system, and eliminates it by the increased action it imparts to the excretory functions of the skin. It thus proves a powerful agent in the purification of the blood.

When there is excessive determination of blood to the head, or the patient is subject to headache, a towel, folded and wet in cold water, is laid upon his forehead when he is enveloped, and is renewed as often as it becomes hot; thus, an excessive flow of blood to the head, which the horizontal posture favors, is prevented.

This is the ordinary mode of packing in chronic cases. In this envelopment the patient remains from thirty minutes to an hour and a half, according to the reactive powers of his system. He should get thoroughly warm in the sheet, in order to determine the heat to the surface, and secure a full reaction in the bath which follows. If he should get comfortably warm in fifteen or twenty minutes, thirty or forty minutes would be a sufficient length of time to remain in the pack; but if he warms more slowly, he must remain from an hour to an hour and a quarter. If *sweating* is desired, the patient must remain till perspiration appears on the forehead; the time may vary from forty-five minutes to two or three hours. If this be the object sought, the dry blanket pack, or the vapor bath are generally used instead of the sheet.

In the early days of Water Cure, and especially in Germany, sweating was thought to be the main object of the pack, and it was carried to a great excess. But it is used now to produce a milder stimulus of the skin and to determine the blood to the surface, and thus equalize the circulation, rather than to excite excessive action of the perspiratory glands.

Generally when the patient lies long enough to produce perspiration, just before it appears, he will feel less warm, and, perhaps, have a slight sensation of chilliness which will be succeeded by copious perspiration.

Where the object is *not* to produce perspiration, but to stop short of that, the patient should be taken out when a full and thorough sensation of warmth is felt, aiming to have him reach the fullest degree of heat of the surface he can obtain without producing perspiration. But this period will vary with the reactive vigor of the patient; some being ready to be taken out in half an hour, others requiring an hour and a half.

Nervous persons will not bear as long, nor as frequent packs, as those of a more muscular or lymphatic temperament.

In all cases, after a pack, some form of bath must be taken to cleanse the skin of the refuse matter eliminated during the process, and by its tonic effect to render permanent the increased action of the cutaneous circulation produced by the envelopment. The kind of bath will vary with the strength of the patient and the means at command. If the patient has any distance to go, to reach the place where the bath is to be given, the blankets must not be untucked as he rises from the bed, but pinned at the top so that they will remain over the sheet, till he is ready to have the bath administered to him; the attendant loosening them and the sheet as well, and holding them up so that he can walk. But in home-practice, as the bath is usually a sponge-bath, dripping-sheet, wash-down, or half-bath, it can be given in the room where the patient is packed; and here the blankets are at once untucked and the bath given. If very feeble, he may be sponged off in the bed, always taking care to dry with the towel or dry rubbing sheet, using friction enough to produce reaction.

In acute diseases, where there is great febrile excitement, it is sometimes used for the purpose of extracting as much heat as possible, and as rapidly

as possible. Here the patient is merely enveloped in one or two blankets, outside the sheet, so as to allow the evaporating process to go on, the sheet being wrung out of fresh water every half hour, or oftener if there is extreme heat, until the fever is reduced. In some cases, the envelopment may be opened and the sheet rewet by sprinkling with cold water; or, two sheets should be used, one soaking in the cold water while the patient is lying in the other. In the feverish stages of remittents and intermittents, and in the various inflammatory fevers, this form is very advantageous.

No agent is more useful when properly used, yet but few persons understand its employment so thoroughly as to prescribe it with benefit to the patient. It is directly lowering in its effects upon the system, and yet indirectly gives tone and strength where there is *mal-distribution* of blood, inasmuch as it relieves an accumulation in one part, by supplying a deficiency in another. Repeated from day to day, it relieves irritation and congestion of any of the visceral organs, and congestion or inflammation of their mucous linings, and restores the blood to the surface and extremities, thus producing an equilibrium in the whole system. When the patient is chilly, the pack is *contra*-indicated, as its use would drive the blood still more from the skin upon the internal organs, and increase their congestion. Hence, its employment in the cold stage of intermittents is very hazardous.

In treating chronic difficulties and very feeble cases, it frequently occurs that the patient has not vitality enough to warm the whole sheet at first, and the half-pack or towel pack is used in the commencement of the treatment. Often one towel is sufficient, laid across the chest and bowels, the rest of the system being enveloped in dry blankets. In a few days, a second towel may be added the whole length of the spine, and these continued till the reactive energy of the system will have increased sufficiently to bear the half-pack, and then the full wet-sheet.

Too frequent application of the wet-sheet must be avoided, as its lowering effect will prostrate feeble patients, if used too often or too long at a time. This point can be determined, by the deficient reaction of the patient after his usual baths, and by his torpitude, lack of nervous energy, and tendency to chill.

The pack is used in the treatment of most fevers, in inflammation of the kidneys, liver, spleen, lungs, &c., and in some cases, in inflammation of the stomach and bowels. In skin diseases, dysentery, diarrhea, summer-complaint, coughs, colds, bronchial affections, and in the great majority of chronic diseases, it is also prescribed.

THE BLANKET PACK, OR SWEATING BLANKET.

THE envelopment having been prepared as for the wet-sheet pack, omitting the sheet and having two blankets next the patient, he lies down, and the assistant brings over the blankets and comfortables, tucking him closely as he does in the process just mentioned. Other blankets or comfortables, or a feather bed, are then placed over all, and closely tucked, the great point being to seal hermetically the upper end of the trunk, over the shoulders, and round the throat and neck, and also at the feet, so that the hot air within cannot escape, nor the cold air without find an entrance. The heat evolved from the body is thus confined, producing an excited or feverish state of the skin, which is followed by opening of the pores and perspiration. To expedite the process, a jug of hot water may be placed to the feet, especially if they have a deficient supply of blood.

If the head get hot and uncomfortable, a wet towel may be applied to the forehead. If the patient desires, a tumblerful of water may be given him from time to time.

The windows of the room should be opened as soon as the patient is packed, to keep him well supplied with fresh air.

The average time required to produce perspiration is from two to three hours. The patient then remains in as long as the indications of the case require.

The blanket-pack is followed instantly, in every case by some form of bath, the pail douche, rubbing-sheet, or half-bath.

It is indicated, where a powerful action of the skin is required; as, in skin diseases, torpidity of the liver, and forms of indigestion characterized by loss of tone, rather than an irritation of the nerves of the stomach and bowels. Also, in chronic rheumatism and rheumatic gout.

THE VAPOR BATH.

THIS is so well-known, that a description of it is hardly necessary. The domestic mode of using it, is as follows: The patient is undressed, and is then seated on a high Windsor, or wooden-bottomed chair, so that the steam shall not strike him directly as it issues from the vessel in which it is generated. After seating himself, a large blanket or coverlid is thrown around him from behind, covering the back part of his body, and also the chair, and is then pinned in front; another is passed around him in front, and pinned behind, and thus the body is so completely covered, that the escape of the steam is prevented. The steam is generated with an apparatus in which water is boiled by a spirit lamp, or from a vessel containing water, placed under the chairs in which hot bricks, stones, or smoothing-irons are immersed.

The time required to produce perspiration will vary from ten to twenty minutes, and it should seldom be kept up more than ten minutes. If the bath affects the head unpleasantly, producing faintness, sickness, or fulness of blood in the head, it should be discontinued. Bathing the face with cold water, or drinking it in sips, often counteracts this tendency, and enables the patient to remain in the bath the full length of time desired. A folded wet towel, often rewet to keep it cool, should be placed on the head at the commencement of the bath, to prevent too great a determination of blood to the brain.

Another form of the vapor bath, is the Spirit-vapor bath, or hot air bath, first introduced to the notice of the profession by Prof. J. King, nineteen years ago.

Its mode of administration differs from the preceding in producing perspiration by heated air, instead of steam. A saucer or tin vessel, containing about two table-spoonfuls of whisky or alcohol, is placed upon the floor, under the chair, and kindled to a flame by touching to it a piece of burning paper, dropping the part of the blanket which has been raised, and allowing the spirits to burn till it is consumed; taking care that the flame does not burn the blankets. As soon as consumed entirely, and the flame extinguished, add the same quantity of spirits, and again ignite. Continue this till the patient perspires freely; this will be in five or ten minutes, as a general rule.

After using both these forms of vapor-bath, some form of full bath should be used, to cleanse the skin, restore tone to its relaxed blood-vessels, and by

fixing an increased amount of blood in its cell-structures, establish a more vigorous capillary circulation.

It is of use in skin diseases, colds, febrile and inflammatory attacks, and recent amenorrhea and dysmenorrhea, and sometimes in suspended lochia, and some of the inflammatory attacks during the puerperal period.

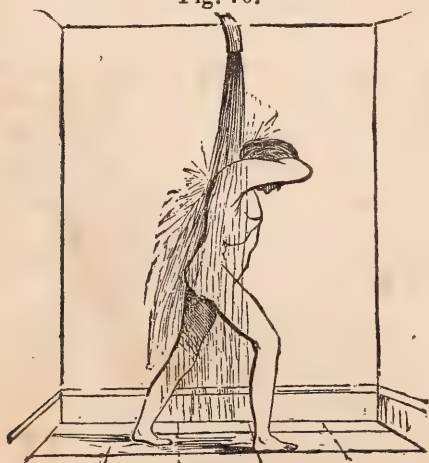
It should not be administered to those who have great weakness of the lungs, in whom the process of decarbonization of the blood goes on imperfectly, or it will be attended with injurious consequences. For it quickens the pulse and circulation remarkably, without increasing the respiration, and thus the relation between these functions is destroyed—the respiration, which is not quickened, not bringing oxygen enough into the lungs to decarbonize the increased amount of blood hurried through them by the vapor-bath. The pure blood of the arteries becomes defiled by the excess of impure, unoxygenized blood, and the symptoms of a sensation of a rush of blood to the head, giddiness, fainting, nausea, &c., ensue. Hence, care should be observed in its use, not employing it in doubtful cases without the advice and superintendence of a physician.

THE DOUCHE.

THIS is one of the most powerful of all the Hydropathic appliances, and the least adapted for family use. Much injury has been occasioned by its injudicious employment.

It consists of a stream of water, varying in size from half an inch to two inches in diameter, and having a fall of from ten to twenty feet. In home-practice, a minor form of douche may be had, by pouring water from a tea-kettle, from an elevated position, the attendant standing at an upper window or upon a chair or box, so that the stream may fall with some force upon the part, refilling the kettle when empty, till the process has been continued a sufficient length of time.

Fig. 76.



Douche.

Fig. 77.



Hose.

The *hose-bath* is a stream of water flowing through an India-rubber or Gutta-percha tube, having less force than the douche, and capable of being directed against any part of the body.

In taking the douche, the patient should first place himself beside the column of water as it falls, and having wet his face and head, extend his

right arm under it, making it run up and down his arm for a moment or two. The stream should then cross over the back of the neck and down and up his left arm. Then, bend himself backwards and sidewise and let the column of water fall obliquely upon and across his chest and abdomen, taking care not to let it strike upon the pit of the stomach. Then let it play upon the shoulder-blades, and up and down each side of the spine, not upon it, and from side to side. He should then let it play up and down the legs and thighs, the soles of the feet, &c. The douche may be taken from one to fifteen minutes; commencing with it for a short time at first and gradually extending the length of the bath.

Caution should be used not to take it on the head, nor to suffer the stream to rest upon any part of the body, especially the spine. It is dangerous from the powerful shock which would be given to the brain and nervous system, and also from the too great abstraction of heat suddenly from those parts. Very few patients are able to endure the powerful effects of the douche, compared with those who can bear the half-bath and other milder forms. Hence, great care should be taken in its application to diseased conditions.

From the stimulus it gives to the circulatory system, it is an invaluable aid where there is torpor of the liver, chalky and rheumatic enlargements of the joints, stiff joints, tumors, ulcers upon the lower extremities, and in paralysis, gout and rheumatism. Sometimes a douche of four or five minutes will at once relieve an attack of lumbago or crick in the back. It should be allowed to play up and down each side of the spine, and especially at the small of the back. In chronic rheumatism the force of the stream should fall mainly on the rheumatic joints and muscles connected therewith, to excite greater action and induce absorption of enlargements or deposits, generally present in such cases. In the treatment of various forms of dyspepsia and in some forms of disease of the uterus, it is employed, after other means have secured good reactive energy, to stimulate the system still more and heighten the nervous vigor.

THE HEAD DOUCHE.

THIS bath may be given ordinarily as follows:—The patient kneels down and stoops his head forward and downward into an empty bath or tub. An assistant then pours one, two, or more pails of water upon the back of the skull, so that it runs forward over the head into the bath. If very cold water is used, a dipperfull should first be poured on the back of the head, and the assistant shampoo it so as to excite the surface to action and prevent too sudden abstraction of heat from the brain; then pour on the remainder. Or, a milder temperature may be used for the water first applied to the head, following it with cold water.

Another form of administration is to have the patient lie upon a lounge or bed and extend his head beyond it, over a tub, having the assistant support it while he pours the water on as in the previous case. This mode is in very general use in fevers, where there is great heat in the head and an oppressive fulness of blood. Here the water may be applied, till the patient feels relieved from the heat and fulness, and used again when the fever returns. But it will be better *not* to use too cold water, for a gradual and long-continued abstraction of heat is better and safer for the patient, than a too sudden cooling of the brain. The head should be dried with a towel, so that the water will not drip from the hair, and then the

process of evaporation, which is in itself cooling, allowed to go on. In the congestive fulness of the brain which often is present in intermittents and remittents, the head douche thus applied will give immediate relief. In the earlier stages of tonsillitis, the head-douche, given three times a day, of two or three pails of cold water, is beneficial.

In delirium tremens, it is also useful, driving the blood from the brain and producing quietness of the nervous system. Here, it should be used quite cold, administering according to the form first given. It is also beneficial in common inflammation of the eye. Will often relieve the sick-headache at once, and afford great relief in nervous headache.

The ordinary head-douche consists of two pails. It relieves the torpidity of the brain, arising from congestive fulness of that organ, as well as the enfeebled condition of the nerves which have their origin within the cranium. Hence, its use in chronic congestive fulness of the brain, in chronic inflammation of the eye, in epilepsy, and in dyspepsia, where it has arisen from excessive brain-work.

The rationale of the second form used in fevers may be deduced from the fact, that in health the brain receives one-third of the blood thrown out by each pulsation of the heart; and in acute diseases a still larger proportion is sent to it. By the constant and continued application of the cool water to the skull, it cools the circulation very rapidly and effectually.

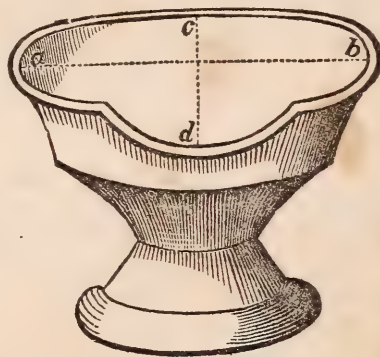
THE HEAD-BATH.

THE patient lies on his back, and places the back of his head in a shallow dish containing an inch or two of water.

Fig. 78.



Fig. 79.



Head-bath, and vessel for taking it.

Fig. 79 represents the most convenient utensil for the head-bath. Length from *a* to *b*, eleven inches; breadth from *c* to *d*, eight inches; depth, three and a half inches; height from ground, seven inches; height from ground to bottom of notch *d*, five and three quarter inches. The bottom is concave.

In taking it, the patient lies down on his back, with a couple of pillows placed under his shoulders, which raise his head so that the back of the head rests on the bottom of the bath. The water should be about an inch and a quarter deep. The duration of the bath usually is fifteen or twenty minutes.

The immersion of the back part of the head diverts the blood from the frontal region, and often gives relief in sick and nervous headache, and neuralgic affections of the head and face. When the pain is located on one side of the head, the other side should be immersed.

When the object is to cool the head, the wet scull-cap, made double of coarse linen, fitting close to the head, covering the ears, and coming pretty well over the forehead, is very useful. It is dipped in cold water and lightly wrung out, and then placed upon the head. It should be rewet before it becomes very hot or dry; thus, by the constant evaporation produced, it keeps the head cool and relieves headache.

In inflammation of the brain and those stages of high inflammatory fevers where the brain is involved, the application of ice-cold bandages, or snow or pounded ice enclosed in an oil-silk covering, is a valuable remedy. It should be continued constantly till the inflammation subsides, or it proves chilling or unpleasant to the patient, when it should be removed.

THE EYE AND EAR BATH.

FINE, small, ascending douches, formed by forcing water with a light pressure through a hose, are useful in various diseases of these parts. In films on the eye-ball, or granulations on the eye-lids, the ascending douche is administered, applying it for two or three minutes—the water used not being very cold. Immersing the eyes in water is also very useful. In diseases of the ear, where the ear-douche cannot be had, tepid, cool, or cold water may be injected into the ear from a small syringe.

THE NOSE BATH.

In a variety of nasal affections, catarrh, colds in the head, inflammation and ulceration of the nasal passages, nose-bleed, &c., this remedy proves beneficial. Water should be sniffed freely through the nostrils and drawn back, if possible, so that it is ejected by the mouth. This should be repeated several times a day, when the object is to tone the debilitated mucous membrane of the nose, and should be used cool or cold. When, as in ulcerated surfaces, the design is to cleanse them, it may be used tepid, following with cold water for a tonic effect.

MOUTH, OR ORAL BATH.

FOR inflammation of the gums, mouth, throat, and palate, in toothache, catarrh, colds, chronic hoarseness and in bronchial affections, baths for the mouth and throat, and garglings, are beneficial. In mucous secretions, occasioned by exhalations from a foul stomach, or diseased air-tubes, deposited on the tongue and the back part of the mouth and upper part of the throat, frequent rinsing and gargling of these parts will remove a large amount of slimy material.

SITZ BATH.

CONVENIENT tubs, either wooden or metallic, are constructed for this bath, having the back higher, so as to serve as a support; but, an ordinary wash-

tub will answer. (See Fig. 80.) It should be large enough to admit the motion of the arms in rubbing the abdomen, sides, and hips, first with one hand and then with the other; and it should be sufficiently deep to allow the lower extremities to bend over the edge without producing pressure, or checking the circulation. From four to six inches of water is poured into the tub. Some undress completely, and place a blanket or sheet over the upper part of the body; but generally, only the parts of the person to be immersed in the water are uncovered.

When the tonic effect of the bath is required, it may be used cold, varying in time from five to ten or fifteen minutes. But feeble persons must use it of a more moderate temperature, and take it from one to five minutes, gradually reducing it, until the system will endure the cold bath and full length of time.

It acts by causing the bloodvessels of the parts with which the water comes in contact, to contract and rid themselves of any excess of blood, and as the stimulus has not been carried to any great extent, there will be but very little subsequent relaxation in these vessels which may be obviated by reapplying the stimulus after short intervals. The tonic sitz-bath always requires frequent repetition, from three to six times a day. It is applicable in all cases where there is an enfeebled or congested state of the parts contained within the hips; as, excessive menstruation, leucorrhœa, loss of muscular tone and prostration of the lower bowels, and prolapsus uteri.

The *derivative* sitz-bath is more frequently used than the *tonic*, as it is particularly beneficial in obstruction of the liver and kidneys, dyspepsia, and congestion of the nerves of the stomach, congestion of the lungs, asthma, bronchial affections, determination of blood to the head, constipation of the bowels, and various forms of nervous complaints. The temperature of the water should be milder than for the tonic form, varying from 60° to 85°, according to the vitality of the patient; feeble patients requiring a higher temperature than more robust persons, especially at the commencement of the treatment. The derivative effect is not reached till the patient has been about fifteen minutes in the bath. For after the contraction of the bloodvessels of the skin caused at first, there is a subsequent relaxation of the capillary blood-vessels of the hips and contiguous parts of the pelvis, which allows a greater accumulation of blood, and thus relieves congestion of the stomach, liver, lungs, and head. In case of costiveness where there is deficient circulation in the lower bowel, by thus causing a greater flow of blood to it, the natural secretion is established and the most obstinate constipation is cured.

When administered for piles and chronic affections of the genital organs, it should in most cases partake of a derivative character—the duration being from twenty to forty-five minutes. The long derivative bath of an hour or an hour and a half's duration is prescribed where there is fulness of blood in the head and chest. In all cases when the derivative action is desired, the water should be warm enough not to produce a chill, but not too warm or the reaction sought will not ensue, and no derivative action be had. If the patient be chilled during the bath, he should either take a hot foot-bath

Fig. 80.



Sitz-Bath.

as cold as can be borne, or at once discontinue it. Perhaps no local bath is of more general service in domestic practice than this; especially when combined with the warm foot-bath. By this combination a colder degree of temperature can be borne, and greater derivative effect produced, the blood being drawn to the extremities as well as to the hips, and better equalization of the circulation effected.

The sitz-bath should not be taken immediately before eating, nor within two hours and a half after a meal. Moderate exercise after each bath should be taken when the strength of the patient will admit; if not, active friction enough to secure a reaction should be used.

LEG AND ARM BATHS.

THE *leg-bath* is useful in cases of ulcers, swellings, eruptions, gout, or rheumatism, sprains, wounds, and other affections of the leg and thigh. A common wooden tub similar to that in fig. 81 is a very good form. The temperature should be mild, varying from 65° to 80° , and may be continued from fifteen minutes to an hour.

The immersing of an inflamed or diseased part in water, either warm, tepid, or cool, according to the circumstance of each case, will exert a powerful influence in modifying the inflammation. A vessel like that in fig. 82 is suitable for this purpose. The fluid, thus not only covers the inflamed part of the arm, but contiguous parts, and In felons by immersing the elbow in cool water, and continuing the immersion, the circulation is cooled, and an antagonistic action set up, thus lessening the inflammation of the finger or thumb.

Another mode of applying water to inflamed parts of the leg or arm is *irrigation*. Two forms are represented in figures 83 and 84.

The affected limb is laid upon a pillow or cushion with a piece of oilcloth covering it and so arranged as to convey the water into a vessel placed below to receive it. A vessel containing water is suspended over the bed. The inflamed part is covered with lint on soft linen cloths, and the water conducted by means of a strip of woollen or other cloth, wide at the upper end which lies in the water, and pointed at the lower end which hangs from the bucket and touches the limb so that a continuous stream of fluid is conveyed, on the principle of the syphon, to the inflamed part. The temperature of the water may be varied to suit the sensibilities of the patient and the height of the inflammation. In French surgical practice, the bucket or vessel is made of tin or other metal, and the water kept at the required temperature by means of a spirit-lamp placed under it. The sensations of the patient is the best guide in determining the degree of heat or cold to be used. Tepid water is preferable in the majority of cases.

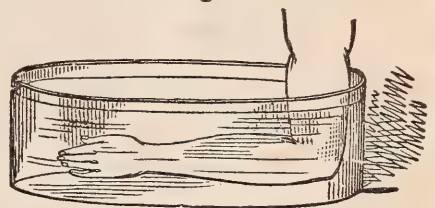
Fig. 81.



Leg-Bath.

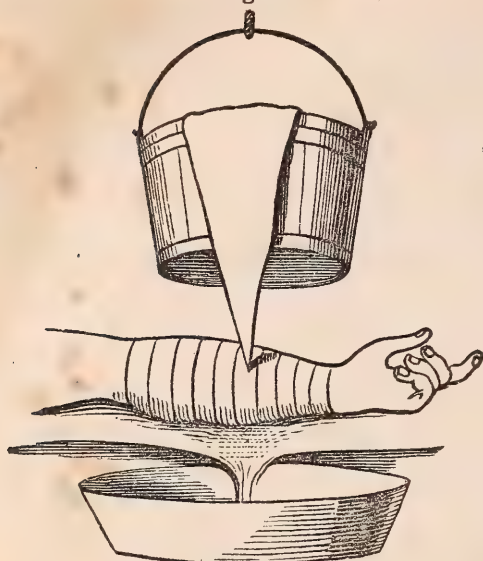
cools the blood which flows to it.

Fig. 82.



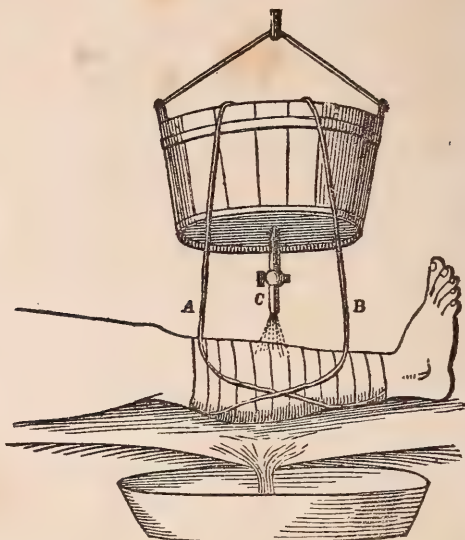
Arm-Bath.

Fig. 83.



Irrigation.

Fig. 84.



Irrigation.

Another method is to convey the water by means of two ropes of candle-wicking suspended from the bucket, as in fig. 81. Another still by a stop-cock, spigot, or other means which will convey a steady, small stream of water to the part.

FOMENTATIONS

MAY be used either warm or hot. Warm fomentations are soothing and should be used where a sedative effect is desired. Hot fomentations where active counter-irritation is indicated, as in colic, peritoneal inflammation, pleurisy, &c.

Two forms of application are used, either of which is effectual. The usual method is as follows:—Fold a small blanket so that its breadth when folded will reach from the bottom of the spine to the arm-pits, and place it upon the bed under the patient, who has undressed as for sleep. Take from one-half to one yard of flannel cloth and fold it several times, so that its breadth shall be from eight to twelve inches, and length sufficient to cover the abdomen and sides; place it in the bottom of a wash-bowl and pour on boiling water till it is saturated; remove and enclose in a towel, and wring it as dry as possible; then place it upon the abdomen, covering both with the ends of the blanket closely tucked, so as to retain the heat at as high a temperature as possible. Every three or five minutes, remove the flannel, and place a freshly wrung one instead, continuing the process from half an hour to an hour, or until the desired impression has been secured. This is the ordinary mode of applying hot fomentations to the abdomen. A similar application may be made to any part of the body, as to the face for neuralgia, to the joints for rheumatic pains in them, over the lungs for pleurisy, over the pelvic region for the pain in dysmenorrhea, &c.

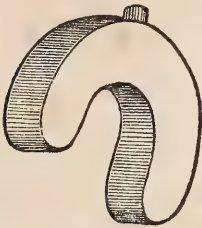
Another and more convenient form is the use of tin fomenters as seen in figs. 85 and 86.

Fig. 85 is the form used to foment the neck. It constitutes half of a four-inch circle, being two by two inches. Fig. 86 is the best shaped instrument for the stomach and bowels. It is $9\frac{1}{2}$ by $6\frac{1}{2}$ inches, with a curve two inches deep. The space between the inner and outer plates or surfaces

is one inch; the tube three-fourths of an inch in diameter and length. The orifices are made tight by corks.

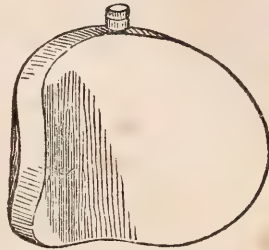
The fomentors can be made of any desirable curve to fit any part of the body. The temperature of the water with which the fomentors are filled, varies from 130° to 160° . Under the fomentor should be placed two or more folds of flannel, wrung out of warm water. The application may be

Fig. 85.



Tin Fomentor.

Fig. 86.



Tin Fomentor.

continued from twenty minutes to an hour as the case requires. A wet bandage should be applied to the surface, or the part should be sponged off with cool or cold water immediately after the application of the fomentations. This process diminishes the sensitiveness that would occur from its frequent use, and by its tonic effect, fixes an increased amount of blood in the capillary vessels of the part which has been fomented.

In the early treatment of many chronic diseases which arise from, or are connected with disease of the abdominal viscera, and especially in the treatment of indigestion, the warm abdominal fomentation is of great use in the early stages of the treatment, to soothe the nervous irritability and relieve internal congestion. It should be discontinued after this irritability has been allayed and the patient can bear other forms of treatment.

The hot form of fomentation may be applied where the object is to produce a powerful diversion of blood to the surface from some internal organ. In bilious and painter's colic, pleuritic and puerperal pains, in spasms of the stomach, bowels, and uterus, in the intense congestion of the liver and spleen which is present in the chill stage of intermittents, and in congestive fever and the later stages of Asiatic cholera, fomentations applied as hot as they can be wrung out, and continued till an amelioration of the symptoms takes place, have proved a valuable and reliable remedy.

A similar application of hot fomentations to the feet, where there is congestion of the womb causing pain in the pelvic region and lower part of the spine, congestion of the lungs as in hemorrhage from them, congestion of the brain which occurs in some forms of acute disease or results from concussion of the brain by blows, falls, &c., has proved of very decided value. It allays nervous irritability and equalizes the circulation, diverting it from the oppressed brain or lungs.

In spitting of blood, the hot fomentations may be applied till some relief has been obtained and a diversion of blood to the feet partially effected, when cold bandages can be applied, covered with several thicknesses of flannel, to retain the heat which will be evolved, and thus produce a poultice effect to the surface. The reaction from the application of the cold bandage, will create a permanent diversion from the lungs, and check hemorrhage. An eminent German Water-Cure practitioner, uses the cold bandage only; this may be safe for robust patients, but the preparatory use of hot fomentations is the most judicious for feeble cases.

WET COMPRESSES.

THESE are *cooling*, when a piece of cloth, two or three times double, is wet in cold water and placed over the affected part, being left uncovered, to favor evaporation. Or, they may be frequently rewet, in snow or ice water. They should be used on bruises, sprains, local inflammations, &c., where the aim is to reduce feverish heat.

They may be converted into *heating* bandages by covering them with oil silk, or several folds of cotton or flannel, so as to prevent evaporation, and retain the heat.

The *wet girdle*, or body compress, is made of sheeting or table linen, of double thickness, and eight or ten inches in width. Where the spine is easily chilled, it should not meet over it by about four inches. But as a general rule it may extend around the body, reaching from the pit of the stomach downward to the hips. It should be covered by a dry bandage of cotton or flannel, about two inches wide, of double fold, and long enough to reach around the body two or three times. In chronic cases, it may be worn wet in front only, at first, and at night. Afterward, in addition, from 9 A. M. through the day and night. It should be rewet every five or six hours, or oftener, if it becomes dry; in some cases, sponging off the parts to which it has been applied, and using friction. It may be secured by pins or tapes. See fig. 87.

Fig. 87.



The Wet Girdle.

It is very extensively used in the treatment of fevers, especially intermittent and typhoid fevers. A temporary bandage may be made by folding lengthwise a cotton bed-sheet—a single one, if it can be had—and wetting just enough to pass around the body once, wringing it well, and bringing the dry part over the wet as a covering. This form will generally reach from the arm-pits to the hips. Changed every four or five hours, or oftener, if the feverish heat requires, it proves a very valuable agent in allaying the internal inflammation common in these fevers.

The wet compress of four thicknesses, covered with a dry one, and changed often, controls effectually inflammation of the liver, stomach and lungs. Where the inflammation is very intense, the clothes may need to be rewet every ten or fifteen minutes; in other cases, once in half an hour or an hour, as the height of the inflammation may indicate. They should be discontinued with the subsidence of the inflammatory action.

The wet girdle is often used as a substitute for supporters; the lower edge of it being drawn more tightly than the upper, it presses the relaxed bowels upwards, and by relieving the downward pressure upon the uterus, affords relief in falling of the womb. It also allays irritation of the organs contained in the pelvic cavity, and regulates the action of the bowels, kidneys, liver, &c.

The *Chest Jacket* is made of similar material—a dry bandage, three thicknesses of twilled cotton, covering the inside wet bandage—in the form of a double breasted vest, fitting closely to the chest, and secured by pins

or tapes. It is very useful in all diseases where there is chronic irritability of the stomach, throat and lungs. Many persons whose duties through the day do not permit its use, find great relief from wearing it at night, in the morning taking it off and sponging the chest with cold water.

FOOT BATHS.

THESE are tonic or derivative. *Tonic*, when the feet are placed ankle deep in cold water, for one or five minutes, rubbing one foot against the other during the bath. They are then dried, and well rubbed with coarse towels and the hand. *Derivative*—taken ten minutes at a time, generally just before going to bed, where the object is to warm habitually cold feet. Students, and others who use the brain actively, will find great benefit from the use of the derivative foot-bath at bed-time.

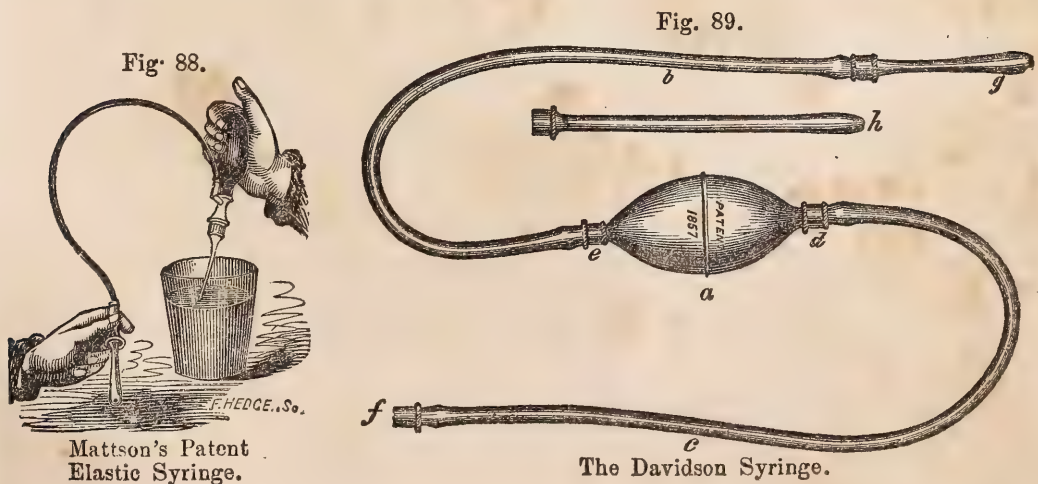
The *shallow foot-bath* differs from the preceding in the depth of the water used; being an inch deep, only, when the feet are immersed. The feet may remain in two or three minutes, then taken out, dried, rubbed by an attendant, again put in the water for a few minutes, and the drying and rubbing repeated, and after another repetition, dried, and reaction secured by thorough friction.

The *warm or hot foot-bath* is used at a temperature varying from 100° to 110°. Taken for five minutes, it is a valuable means of warming the feet so that reaction will ensue, when they are put in water of a colder temperature. When combined with a derivative sitz-bath, the water should be renewed every ten minutes, to keep up a constant derivative effect.

INJECTIONS.

THIS term is generally applied to clysters, or injections of water into the bowels. Simple water, of various temperatures, can thus be used in a very great proportion of cases of disease, as the bowels are more or less irregular in their action, where patients are suffering from ill health.

Syringes, or injection instruments, are of very numerous patterns; but among the best now in use, combining utility, convenience, and durability, are Mattson's Patent Elastic Syringe, and a more recent invention, the "Davidson Syringe." The accompanying cut and explanation will give the reader an idea of this instrument and the manner in which it is worked.



The bulb (*a*) and the tubes (*b*) and (*c*) are made of vulcanized rubber, and all the other parts of block tin. The valve boxes (*d*) and (*e*), fixed in each end of the bulb, contain valves which open inward and outward, or to and from the bulb respectively. The suction pipe (*c*) is attached to the box (*d*) and its other extremity is terminated by the end piece (*f*). The delivery pipe (*b*) is attached to the box (*e*) and is terminated at its other extremity, so that either the anal pipe (*g*) or the vaginal pipe (*h*) may be used.

By introducing the extremity (*f*) of the suction pipe into the enema, and by the alternate compression and expansion of the bulb (*a*) any required amount may be administered without removing the instrument, which possesses the further advantages of durability, portability, facilities for cleansing, and adaptation to every use of an injecting syringe. The ease with which this instrument can be managed, in any position of the body, by an invalid, and its adaptation to those cases in which the injection requires for its efficient action, a level or an elevated position of the pelvis, recommend it to favorable notice.

Both work easily, and are the best forms of self-injecting syringes now in the market.

Where there is diarrhea, and acrid, irritating matter is present in the bowels, large tepid injections should be used, taking from six to twelve ounces of water at a time, retaining it for a short time, if possible; then when a desire for an evacuation of the bowels is apparent, permitting it, and repeating the clyster, if necessary, till a thorough evacuation of the morbid accumulation has been secured. Then follow with small cold injections of one or two ounces, immediately after each evacuation, retaining the injection, if possible.

When constipation is to be removed, to produce an immediate evacuation, use the full injection of a temperature of from 75° to 85° . But to restore healthy action to the bowels, the small cool injection taken from two to four times in the twenty-four hours, is most efficacious. It allays the feverish heat and dryness, quickens the action of the secretory vessels of the lower bowel, and gives tone to the nervous system connected therewith. As a general rule, tepid injections should be avoided in cases of constipation, and the small cold injection used.

In the early stages of most fevers, there are accumulations in the bowels, which, in many cases, have been exciting causes of these attacks. By a free use of injections of a temperature of 80° , these may be removed, and the fever cut short.

In all acute attacks of diarrhea, in dysentery and in cholera, the small injections are indicated, and should be used.

In treatment of falling of the womb, cool *rectal* injections give tone to the bowels and to the appendages of the womb, and are valuable aids in restoring healthy action of the reproductive organs.

Vaginal injections have been used of various temperatures, to remedy disordered action of the mucous surfaces of the vagina. Taken three or four times a day, cold, they are useful in leucorrhea and various inflammations of the womb. In some forms of acute inflammations of the uterus, the tepid vaginal injection is much used to reduce the feverish action.

GENERAL OBSERVATIONS.

All full ablutions should be taken when the body is warm, as the system should be in the best possible condition to react against the coldness of the water. In chronic cases, the bath should be followed at once by walking, or other active exercise, where the patient's strength will admit.

No meal should be eaten within an hour after bathing, nor bath be taken within two hours after eating. For when food is taken into the stomach, it incites a greater flow of blood to that organ, to enable it to digest the food, while the intent of the bath is to cause the blood to flow to the surface in greater quantity—thus the two processes counteract each other, and either disturbance of the digestive function, or deficient action of the skin takes place.

The usual times for bathing are, on rising in the morning, at 10 A. M., and 3 P. M., and at bedtime. But no bath of an exciting, or stimulating character, should be taken at bedtime by nervous patients.

Each full bath should be taken rapidly, the patient, if able, rubbing himself vigorously, so as to increase the action of the heart and lungs, and secure a better reaction. Then dress and exercise. But in acute disease, where the design is to save the patient's strength, or where baths are given to reduce inflammatory heat, exercise is contra-indicated.

A sufficient interval should elapse between baths, to allow of full reaction after each, or the patient will receive injury from their use.

Each patient should commence treatment with water of a temperature suited to his own constitution. Some will bear water at 60°, others at 80°, and cases are not unfrequent where baths cannot be taken at a temperature below 85°, without injury. As the patient's reactive powers increase, he may lower the temperature, and will finally be able to use cold water for his usual baths. But sensitive persons must use mild temperatures, and even may not be able to bear a full ablution of the surface every day. If good reaction is not secured, then the bath should be omitted, and thorough friction used instead.

In acute diseases, when the tongue is foul and the fever high, with either deficient or morbidly voracious appetite, fasting should be pursued till the appetite returns, or becomes normal. There is far less danger of "starving to death" than people imagine. As a general rule, patients keep up their strength well with no sustenance but water, or mucilaginous and demulcent drinks. When the tongue begins to clean off, a natural appetite returns, and food may be taken. But where the tip and edges of the whole tongue are of a vivid red, indicating high inflammation of the digestive organs, food is contra-indicated till the irritation is reduced, or the indiscretion of eating may induce a fatal termination.

In chronic cases, there is a deficient and irregular circulation of the blood, congestion of one or more of the internal organs, and inefficient action of the nutritive and secretory functions. The water-cure processes quicken and equalize the circulation, diverting the blood from the internal congested organs to the surface and extremities; they allay irritability, and strengthen the nervous system, and by the stimulus of the cold, hasten all the vital processes, and build up again the enfeebled constitution. Or more correctly speaking, they remove obstructions, and place the system in the best possible condition to rally all its powers, and regenerate the physical structure. Air, exercise, diet, regulation of all the voluntary habits, are aids to water, in affording proper hygienic conditions for the vital forces to remove the results of diseased action.

GLOSSARY

OF TECHNICAL TERMS USED IN THIS WORK.

- Abdomen*, the belly.
- Abdominal Cavity*, the cavity of the belly.
- Abscess*, a cavity containing matter.
- Absorbents*, certain vessels and glands in the system, which absorb or take up substances from within, or externally.
- Acromion Process*, the process or bony projection on the top of the shoulder.
- Alvine*, pertaining to the intestines, as, "alvine discharges," or discharges from the intestines.
- Amarous*, bitter.
- Amorphous*, having no regular or definite form; not crystalline.
- Amniotic Liquid*, the fluid surrounding the fetus in the womb, and which is known as "the waters."
- Anæsthesia*, insensibility; suspended sensibility.
- Anæsthetic*, an agent which causes insensibility.
- Anchylosis*, a stiff, useless joint; ankylosed or having become stiff.
- Anemia* or *Anemic*, bloodlessness; privation of blood owing to want of the red globules.
- Anterior Fontanelle*, the diamond-shaped, soft-edged space or opening in the front part of the newly-born child's head, just at the upper part of the forehead, and which closes as the infant advances in age.
- Antiseptic*, a preventer of putrefaction.
- Aphonia*, loss of voice.
- Areola*, a colored circle, as around the nipple.
- Areolar Tissue*, cellular tissue; textures composed of cells.
- Asthenic* debility; a disease of debility.
- Atrophy*, wasting, diminution.
- Auricle*, the external ear; the superior cavities of the heart, are also called auricles; they receive the blood from every part of the body.
- Axilla*, the armpit; *axillary*, about the armpit.
- Basilar*, belonging to the base of the head, on the back part.
- Bronchia*, the tubes which convey the air into the lungs; *bronchial*, belonging to the air tubes of the lungs.
- Bulb of the Urethra*, a dilated part of this canal situated toward the root of the penis, and at the commencement of the spongy portion.
- Calculus*, pl. *Calculi*, stone, gravel, or solid unorganized substances, found in the bladder, kidneys, or other parts of the body.
- Cartilage*, gristle attached to the extremities of bones.
- Catamenia*, the monthly flow of females.
- Catharsis*, purging.
- Catheter*, a hollow tube for drawing off the urine.
- Cauterize*, to act upon with caustic, or with an iron heated to whiteness.
- Cellular*, composed of cells.
- Cerebral*, relating or appertaining to the brain.
- Cervical Vertebrae*, the joints of the backbone, at the neck, being the first seven from the skull.
- Cervix*, the neck; *Cervix Uteri*, the neck of the womb.
- Chalybeate*, containing iron or steel.
- Chemosis*, an inflammatory swelling of the eye, in which the white of the eye projects more or less, with a pit or depression in the centre.
- Cholagogue*, a remedy which causes discharges of bile.
- Clonic*, spasms, not permanent in their rigidity, but alternating with sudden relaxation.
- Colon*, the largest intestine, having an ascending, descending, and transverse portion.
- Colliquative*, a term applied to any discharge which is profuse and exhausting in its character.
- Coma*, profound lethargic stupor, or sleep.
- Comatose*, the state of profound stupor, occurring during disease, &c.
- Condyle*, a knob or projection; a term applied to the joint of the finger, &c.
- Confluent*, not distinct; running together.
- Congestion*, distension of vessels and parts by an accumulation of blood in them.
- Conjunctiva*, the external covering of the eye, which also extends to line the eye-lids.
- Contra-indicate*, not indicate; opposed to.
- Coracoid Process*, a projection somewhat resembling a crow's beak, which is situated in front and on the upper edge of the shoulder blade.
- Cornea*, the front, somewhat horny, and transparent covering of the eye.
- Coronal Suture*, the union or junction of the bones of the forehead to those of the upper part of the head, and which may be detected in the infant by feeling the transverse ridge formed by it along the upper part of the forehead.
- Crisis*, the acme or turning point of a disease.
- Critical*, applied to certain symptoms, and to certain periods of disease supposed to indicate a favorable or unfavorable change.
- Cuticle*, the epidermis, or scarf-skin.
- Deliquium*, fainting.
- Desquamation*, scaling off; separation of the skin in small scales.
- Diagnosis*, the distinguishing symptoms by which to determine various diseases.
- Diaphragm*, the midriff, or muscular partition between the chest and belly.
- Diatheasis*, any particular disposition or habit of constitution.
- Distinct*, separate; spotted; being alone; not becoming confused or running together.
- Dorsal Vertebrae*, the twelve joints of the backbone, situated immediately below the joints forming the cervical vertebrae.

- Dyspnœa*, oppressed breathing.
- Effusion*, pouring out; the pouring out of blood or other fluid into the cavities of the body.
- Elevator*, an instrument that lifts up, or raises portions of bone, &c.
- Emesis*, vomiting.
- Endemic*, a disease peculiar to certain localities or districts.
- Epidemic*, a disease prevailing over a large extent of country.
- Epidermis*, the outer skin.
- Epiglottis*, the oval cartilage at the root of the tongue, which, at the moment of swallowing, covers the glottis, and thus prevents the food from getting into the windpipe.
- Epithelial*, relating to the epithelium.
- Epithelium*, a very thin covering upon mucous tissues, as the lips, fauces, bladder, &c., and which is generally met with when removed, in the form of microscopic cells or scales.
- Eschar*, a slough; the dead substance produced by applying caustic,—arising from mortification, &c.
- Esophagus*, the gullet, or canal by which food passes from the mouth into the stomach.
- Eustachian Tube*, a tube or canal leading from the throat to the internal ear.
- Exfoliation*, to separate or scale off; as, a piece of dead bone separating from the living.
- Exhibiting, Exhibition*, exhibiting a medicine, means giving it to the patient.
- Exostosis*, a swelling of the bone, a bony tumor.
- Fauces*, the back part of the mouth, or top of the throat.
- Febrile*, belonging to fever.
- Feces*, the discharges from the bowels.
- Fibrin*, an odorless, insipid compound, which sinks in water, and which is found in animals and plants; the blood of animals contains it, and it enters as a principal ingredient of the muscles of some animals. Clotted blood is formed of fibrin and the red globules of the blood.
- Fibula*, the splinter bone, or the long, small bone at the outer part of the lower leg.
- Flatulent*, windy. *Flatul*, wind or gas in the stomach or bowels.
- Flocculent*, adhering in small flakes or flocks.
- Follicle*, a little bag, sac, or fold.
- Follicular*, belonging to a follicle.
- Foramen*, an opening, or hole. *Foramina*, pl.
- Frenum*, bridle.
- Frontal Sinus*, two deep openings in the bone of the forehead.
- Furfuraceous*, branny; in thin, light scales.
- Gangrene*, partial death; mortification.
- Gastric*, belonging to the stomach.
- Gestation*, the period of pregnancy.
- Glans Penis*, the conical end of the penis.
- Glottis*, the opening into the windpipe at the larynx, covered by the epiglottis.
- Granular*, like small grains.
- Granulated*, showing granulations.
- Granulation*, the filling up of a wound or ulcer by small conical, red, fleshy formations or elevations.
- Hemicrania*, pain on one side of the head.
- Hemiplegia*, palsy of one side of the body.
- Hemorrhage*, a flow of blood.
- Hemorrhagic*, disposed to hemorrhage.
- Hepatic*, belonging to the liver.
- Hypercatharsis*, excessive purging.
- Hypertrophy*, an unhealthy enlargement of an organ, without change of structure.
- Ichor*, a thin, watery, acrid discharge.
- Ichorous*, looking like ichor.
- Inferior*, below.
- Integument*, that which covers anything; the skin.
- Intercostal*, between the ribs.
- Interstitial*, between the pores or interstices of an organ; *interstitial deposition*, a deposition occupying the interstices of an organ, or of contiguous cells.
- Iris*, a membrane forming a flat, circular diaphragm in the front part of the eye; the opening in the center of which is known as the "pupil of the eye."
- Larynx*, the top of the windpipe, including the organs of voice.
- Ligament*, an elastic, tendinous cord.
- Ligamentous*, resembling or belonging to a ligament.
- Ligate*, to secure with a ligature.
- Ligature*, a cord or thread.
- Lochia*, the bloody discharge from the womb after childbirth; the cleansings.
- Lochial*, relating to the lochia.
- Lymph*, a thin, whitish fluid in the lymphatics.
- Lymphatics*, vessels carrying lymph.
- Macula*, spots, blemishes.
- Magma*, a thick residuum, or mass.
- Malaria*, noxious gases from decomposing animal or vegetable matter.
- Mamma*, the female breast.
- Mandibular*, of the jaw.
- Median Nerve*, a nerve passing from the lower cervical vertebræ, along the inner part of the arm.
- Membranous*, having the texture of a membrane.
- Metastasis*, shifting of a disease from one part to another.
- Miasmatic*, partaking of the nature of miasm, or the morbid emanations from sickly or decomposing animals and vegetables.
- Mucous Discharges*, discharges from the mucous tissues.
- Mucous Tissues*, the thin, delicate membrane which lines the mouth, tongue, throat, stomach, bowels, bladder, &c.
- Muco-puriform*, partaking of the character of both mucus and pus.
- Muco-serolent*, partaking of the character of both serum and mucus.
- Mucus*, phlegm, animal mucilage; the discharge from the nose during an attack of catarrh is mucus.
- Nephritis*, appertaining to the kidneys.
- Nosologists*, persons who arrange, explain, define, and classify diseases.
- Nucleus*, pl. *Nuclei*, a central spot.
- Nucleolus*, pl. *Nucleoli*, a simple granule or spot within a nucleus.
- Olecranon Process*, the head or projection of the elbow, upon which we rest the arm.
- Opacity of the Cornea*, also termed leucoma, or albugo, a white speck on the eye, the result of an injury or inflammation.
- Orthopnœa*, great difficulty in breathing.
- Os Uteri*, mouth of the womb.
- Ossification*, formation of bone.
- Ossified*, changed to bone.
- Ovum*, an egg; also applied to the first days of the fecundated germinal particles of woman.
- Ova*, pl.
- Palpi*, feelers.
- Pancreas*, a gland seated behind the stomach secreting the pancreatic juice.

Papilla, pl. *Papillæ*, a term applied to the red elevated points upon the tongue, and other parts, which are seen more distinctly during certain forms of disease.

Papillated, covered with papillæ.

Paraplegia, palsy of the lower half of the body.

Paroxysm, a fit of disease recurring periodically.

Parturient, bringing forth, or having just brought forth; giving birth.

Pediculus, a louse. *Pediculi*, lice.

Pelvis, a large bony basin or cavity at the lower part of the body, containing the lower part of the intestines, the bladder, womb, &c.

Pelvis of the Kidney, a small sac in the back part of the fissure of the kidney.

Pericardium, the membranous sac surrounding the heart.

Perineum, the part or space between the anus and the generative organs.

Periosteum, a thin membrane covering the bones.

Periostitis, inflammation of the periosteum.

Peritoneum, a serous membrane, lining the abdomen, and covering most of the several organs contained in it; it is sometimes termed the *peritoneal coat* of an organ.

Petechiæ, purple, flea-bite like spots, occurring, during low fevers, on the skin.

Phagedenic, a corroding or eating ragged ulcer, that spreads rapidly.

Pharynx, top of the esophagus and windpipe; also called *fauces*.

Phlegmonous Inflammation, an inflammation of cellular tissues, with redness, heat, pain, swelling, and a tendency to form matter, as a common boil.

Plethoric, having a superabundance of blood in the system; or a fulness of the bloodvessels.

Pleura, pl. *Pleuræ*, two thin membranes which line the sides of the chest internally, and also envelop the lungs.

Prognosis, art of foretelling how diseases will terminate.

Ptyalism salivation.

Pubic Bone, the front bone of the lower part of the body, and at the upper part of the organs of generation; sometimes called the *share bone* or *bar bone*. [the lungs.

Pulmonary Hemorrhage, discharge of blood from *Pulse*, beating of the heart and arteries.

Pulse, bounding, where it feels full and elastic, jumping at the fingers as it were, when placed over the artery.

Pulse, corded, where it feels like a stretched cord striking against the fingers.

Pulse, frequent, hurried, or rapid, when it strikes or beats faster than ordinarily.

Pulse, full, where it feels as if the artery was thoroughly full of blood, and distended.

Pulse, hard, where the pulse cannot be compressed, but feels as if it indented the pulp of the fingers.

Pulse, intermittent, where the pulsations cease momentarily and periodically.

Pulse, irregular, where it changes both in force and frequency, at short and unequal intervals.

Pulse, small, when it strikes feeble and slender.

Pulse, soft, when it readily yields to pressure.

Pulse, strong, when the fingers are struck strongly by it.

Pulse, tense, same as corded pulse.

Pulse, unequal, where it is felt to vary in its mode of striking, as well as in its intervals.

Pulse, wiry, same as corded pulse, but feeling more like a wire than a cord.

Pupil, the round dark aperture in the eye which is frequently seen to enlarge or contract, and through which the luminous rays from an object pass to make their impression on the retina, or expanded nerve of sight.

Pus, matter; a yellowish-white, inodorous, thick fluid.

Rectum, the lower intestine.

Remissions, a mitigation or lessening of the severity of symptoms in any disease, especially in fevers.

Resolution, dispersion of a disease; discussion or disappearance of an inflammation.

Retrocedent Gout, when it leaves the joints, and attacks other and distant parts.

Revulsive, medicines supposed to remove a disease, by causing a determination from the seat of disease to some other part.

Sacrum, a triangular bone at the lower part of the backbone; it is about six inches in length and four in breadth.

Sanious, see ichorous. *Sanies*, a thin, acrid discharge from ulcers.

Sclerotica, the coat of the eye next under the conjunctiva; it is a pearly white, opaque, and tough membrane.

Scrotum, the bag which encloses the testicles.

Scybala, hard, roundish lumps, in the feces.

Sebaceous, of the character of suet.

Sedation, a diminution of increased action; a quiet or depressed condition of the vital forces.

Semilunar Cartilages, semicircular cartilages situated between the condyles or projections of the thighbone (at the knee) and the upper and movable surface of the tibia, or shinbone.

Sero-purulent, partaking of serum and pus.

Serous, watery.

Serous Tissues, thin membranes of the body, which secrete serum; they line cavities not externally open.

Serum, the thin, watery part of animal fluids.

Slough, see eschar; dead matter caused by mortification, the application of caustics, &c.

Sordes, the dark deposits on the teeth, lips, gums, &c., in low fevers.

Spermatic Cord, a cord which suspends the testicles, composed of nerves, veins, arteries, &c.; one passes upward along each groin, into the abdomen.

Squamous, like scales; having scales.

Sternum, the breastbone.

Stertorous, noisy respiration, as in apoplexy; snoring.

Subcutaneous, under the skin.

Submaxillary, under the lower jaw.

Subsultus Tendinum, weak twitchings or spasmodic contraction of the tendons, which occurs in low fevers, and is more especially observed at the wrist.

Suffused, overspread, as with a fluid; as, an escape of blood from the bloodvessels, and passing into the neighboring tissues.

Superior, upper, or above.

Suppuration, production of pus or matter.

Sutures, stitches; the union of bones by a kind of saw-like process on their edges, giving to them somewhat of a dove-tailed appearance.

Syncope, fainting or swooning.

Synovial Fluid, a glairy fluid which lubricates the joints; joint-water.

Tarsus, the edge of the eyelid; a term also applied to the instep or ankle.

Tenesmus, a frequent, ineffectual, and painful symptom, urging one to go to stool.

- Tetanic*, spasms of a permanent and rigid character.
- Thorax*, the chest.
- Thyroid Gland*, gland lying before the windpipe, and which is the seat of bronchocele.
- Tibia*, the largest bone of the lower leg; the shinbone.
- Tonsils*, glands on each side of the throat, known as "the almonds of the ear."
- Tormina*, griping pain.
- Tubercle*, a tumor of slow growth, usually of a scrofulous character; tubercles have been found in nearly all parts of the body; internally they have a cheesy structure.
- Tumefaction*, a transient swelling.
- Tympanum*, the drum of the ear.
- Ulnar Nerve*, a nerve extending to the inner and front part of the forearm, to the inside of the hand, and to the last two or three fingers.
- Unequal*, not regular; not uniform.
- Ureters*, the long tubes which convey the urine from the kidneys to the bladder.
- Urethra*, the canal through which the urine is discharged from the bladder.
- Uterus*, the womb.
- Vagina*, the passage from the womb to the external parts.
- Varicose*, affected with varix.
- Varix*, a morbid dilatation or enlargement of a vein, in which the vein presents soft, knotty, and purplish tumors.
- Vault of the Cranium*, the upper concavity of the skull.
- Ventricle*, cavities in the brain, and in the heart. The right ventricle of the heart sends blood to the lungs; the left sends it over the whole system.
- Vertigo*, giddiness; dizziness.
- Vesication*, blistering.
- Vesicles*, little blisters or bladders.
- Vesicular*, consisting of small vesicles or cells; also applied to a sound heard in breathing, when the air passes through the air cells of the lungs.

INDEX.

Abdomen, Dropsy of	339	Aloes,	623	Artichoke, Jerusalem.....	60
Abortion,	526	Aloes, Compound Pills of ..	732	Articles of Animal Diet,....	36
Absent Menstruation,.....	507	Allspice,	75, 623	Articles of Vegetable Diet, ..	49
Acetate of Iron,	664	Alterative Syrup,	740	Artificial Feeding,	546
Acetate of Iron, Tincture of ..	749	Alum,	623	Artificial Mineral Waters, ..	80
Acetate of Lead,	668	Alum, Burnt or Dried	624	Ascites,	339
Acetate of Lead Ointment, ..	729	Alum in Bread, to Detect ..	57	Asclepidin,	682
Acetic Acid,	622	Alum Root,	624	Asiatic Cholera,	412
Acetous Emetic Tincture, ..	744	Amaurosis,	489	Asparagus,	61
Acid, Acetic	622	Amber,	624	Assafetida,	628
Acid, Benzoic	631	Amenorrhœa,	507	Assafetida, Compound Cly-	
Acid, Chromic	642	Amenorrhœa, Acute	510	ter of	723
Acid, Citric	643	Amenorrhœa, Chronic	510	Assafetida, Compound Pills ..	732
Acid, Gallic	652	American Colombo,	644	Assafetida, Compound Tinc-	
Acid, Hydrochloric	661	American Hellebore,	624	ture of	745
Acid, Muriatic	661	American Ipecacuanha,	625	Assafetida, Tincture of	749
Acid, Nitric	674	American Ivy,	625	Asthma,	385
Acid, Nitro-hydrochloric	674	American Larch,	625	Atropia,	631
Acid, Nitro-muriatic	674	American Senna,	625	Attentions to Bowels,	150
Acid, Oxalic	678	Ammonia,	625	Attentions to Child after	
Acid, Pyroligneous,	688	Ammonia, Carbonate of	626	Birth,	545
Acid, Sulphuric	700	Ammonia, Hydrochlorate of ..	626	Attentions to Eyes,	145
Acid, Tannic	702	Ammonia, Muriate of	626	Attentions to Feet,	142
Acid, Tartaric	703	Ammoniac, Gum	626	Attentions to Hair,	137
Acids, Vegetable	71	Ammoniac, Sal	626	Attentions to Kidneys,	153
Aconite,	622	Ammoniated Tincture of Cas-		Attentions to Nails,	144
Aconite Liniment,	724	tor,	744	Attentions to Teeth,	31
Aconite Ointment,	729	Ammonio-Tartrate of Iron, ..	664	Auxiliary Treatment in Fe-	
Aconite, Compound Pills of ..	732	Anasarca,	341	vers,	180
Aconite Root, Tincture of ..	749	Anchylosis,	585		
Aconitina,	622	Anger,	156	Bacon,	39
Acne Rosacea,	500	Angina Pectoris,	386	Baker's Itch,	496
Acne Vulgaris,	500	Ankle-joint, Dislocation of ..	584	Baking,	36
Acute Amenorrhœa,	510	Animal Diet,	36	Baking Powders,	696
Acute Bronchitis,	262	Anise,	627	Balm,	628
Acute Hepatitis,	293	Anthrax,	480	Balm, Parturient	739
Acute Hydrocephalus,	331	Antibilious Physic,	737	Balm of Gilead,	628
Acute Menorrhagia,	513	Antidyspeptic Pills,	732	Balmoney,	628
Acute Metritis,	311	Antispasmodic Tincture, ..	747	Balsam Canada,	639
Acute Nephritis,	301	Anus, Fissure of	595	Balsam Copaiba,	628
Acute Peritonitis,	305	Aphthæ,	248	Balsam of Fir,	639
Acute Rheumatism,	320	Apocynin,	632	Balsam of Sulphur, Com-	
Acute Splenitis,	298	Apoplexy,	344	pound	714
Adhesive Plaster,	735, 736	Appetites,	23	Balsam Peru,	629
Affusion,	762	Appetite, Capricious, during		Balsam Peru, Syrup of	741
After Pains,	532	Pregnancy,	526	Balsam Poplar,	628
Ague and Fever,	185	Apples,	64	Balsam, Pulmonary	740
Ague Cake,	300	Apples, Cedar	689	Balsam Tolu,	629
Ague, Dumb	186	Aqua Ammonia,	625	Balsam, Warren's Styptic ..	715
Ague in the Breasts,	541	Aqua Fortis,	674	Balsams,	714
Air,	13	Aqua Regia,	674	Barberry,	629
Albuminuria,	432	Arnica,	627	Barber's Itch,	496
Alcohol,	92, 622	Arnica, Tincture of	749	Bark of Cotton Root, Tinc-	
Alder, Black	632	Aromatic Spirit of Ammonia, ..	744	ture	751
Alder, Tag	702	Aromatic Tincture of Guai-		Barley,	52
Ale,	86	acum,	744	Barley-water,	52
Aletridin,	704	Arrow Root,	627	Bath, Cold	130
Aliment,	22	Arrow Wood,	627	Bath, Eye and Ear	773
Alkaline Wash,	726	Arteries, Wounds of	553	Bath, Foot	779
Almonds,	623	Artichoke,	61	Bath, Half	764

Bath, Head.....772	Black Willow,.....634	Brown Bread,.....57
Bath, Hose.....770	Black Salve,.....736	Bruises,.....554
Bath, Mouth or Oral.....773	Bladder, Bleeding from.....456	Bubo,.....605
Bath, Nose.....773	Bladder, Catarrh of.....313	Bubo, Sympathetic.....319
Bath, Sitz.....773	Bladder, Chronic Inflamma- tion of.....313	Buchu,.....636
Bath, Sponge.....761	Bladder, Chronic Inflamma- tion of neck of.....315	Buckhorn Brake,.....637
Bath, Towel.....761	Bladder, Inflammation of.....312	Buckwheat,.....53
Bath, Warm.....132	Blanket Pack,.....	Bugle Weed,.....637
Bath, Wash-tub.....762	Blanket, Sweating.....	Burdock,.....637
Bath, Vapor.....769	Bleeding from the Bladder,.....456	Burgundy Pitch,.....637
Baths, Leg and Arm.....775	Bleeding from the Cord,.....550	Burns,.....613
Bayberry,.....630	Bleeding from the Kidneys,.....456	Burnt Alum,.....624
Bayberry, Compound Oint- ment of.....731	Bleeding from the Lungs,.....453	Burnt Deer's Horn,.....638
Bayberry, Ointment of.....730	Bleeding from the Navel,.....550	Burnt Sponge,.....699
Bayberry Plaster,.....734	Bleeding from the Nose,.....452	Bursal Tumor,.....589
Bayberry Wax,.....630	Bleeding from the Stomach,.....455	Burst,.....601
Beans,.....63	Bleeding from the Womb,.....534	Bush Honeysuckle,.....637
Bearberry,.....704	Bleedings,.....451	Butter,.....48
Beech Drops,.....630	Blood, Involuntary discharges of.....451	Buttermilk,.....47
Beef,.....37	Bloodroot,.....635	Butternut,.....638
Beef, Dried.....37	Bloodroot, Compound Ace- tated Tincture of.....744	Button Snakeroot,.....638
Beef's Gall,.....630	Bloodroot, Compound Mix- ture of.....729	Cabbage,.....60
Beef Tea,.....37	Bloodroot, Tincture of.....750	Cabbage, Meadow.....695
Beer,.....86	Bloody Flux,.....288	Cachexia Africana,.....485
Beer, Ginger.....86	Blotched Face,.....500	Cajeput, Oil of.....675
Beer, Spruce.....86	Blue Cohosh,.....635	Calamine Cerate,.....717
Beet,.....61	Blue Cohosh, Compound Tincture of.....745	Calamus,.....702
Belladonna,.....630	Blue Flag,.....636	Calcined Deer's Horn,.....638
Belladonna, Compound Plas- ter of.....735	Blue Flag, Tincture of.....750	Calcined Magnesia,.....671
Belladonna, Ointment of.....730	Blue Vitriol,.....645	Callosities,.....504
Belladonna, Tincture of.....749	Boils,.....503	Calves' Feet Jelly,.....41
Benzoic Acid,.....631	Boiling,.....34	Camphor,.....638
Benzoin,.....631	Bone, Diseased.....587	Camphor Ball,.....717
Benzoin, Compound Tinc- ture of.....745	Bone's Bitters,.....748	Camphor, Compound Mix- ture of.....729
Benzoin, Tincture of.....750	Bones of the Foot, Fractures of.....571	Camphor, Compound Pills of.....733
Berberina,.....629	Boneset,.....636	Camphor, Compound Pow- der of.....737
Beth Root,.....631	Borate of Soda,.....696	Camphor, Compound Tinc- ture of.....745
Bicarbonate of Potassa,.....684	Borax,.....696	Camphor Ice,.....717
Bicarbonate of Soda,.....696	Borax Lotion,.....726	Camphor Liniment,.....724
Bichromate of Potassa,.....684	Borax Lotion with Morphia,.....726	Camphor Mixture,.....728
Big Ivy,.....694	Bowels, Attentions to the.....150	Camphor, Tincture of.....750
Big Neck,.....486	Bowels, Consumption of.....310, 477	Camphor Water,.....727
Bilious Colic,.....404	Bowels, Chronic Inflamma- tion of.....287	Camphorated Tincture of Opium,.....744
Bilious Fever,.....191	Bowels, Inflammation of.....285	Canada Balsam,.....639
Biscuit,.....58	Brain, Dropsy of.....331	Canada Fleabane,.....639
Bismuth, Trisnitrate of.....632	Brain, Inflammation of.....235	Canada Pitch,.....657
Bismuth, Valerianate of.....632	Brandy,.....92	Cancer,.....458
Bisulphite of Soda,.....697	Bread,.....55	Cancerum Oris,.....251
Bitartrate of Potassa,.....684	Bread, Brown.....57	Candies,.....50
Bites of Snakes, Insects, &c.....555	Bread, Toasted.....58	Canella Alba,.....639
Bitter Root,.....631	Bread, to Detect Alum in.....57	Canker Lettuce,.....691
Bitters, Bone's.....748	Breast-bone, Fracture of.....566	Cantharides,.....639, 697
Bitters, Restorative Wine.....728	Breasts, Ague in the.....541	Cantharides, Tincture of.....755
Bitters, Wine.....728	Breasts, Painful during Preg- nancy.....526	Capricious Appetite during Pregnancy,.....526
Bittersweet,.....632	Breasts, Swelling of in In- fants,.....550	Capsicum, Ethereal Oil of.....640
Bittersweet, False.....650	Bright's Disease,.....432	Capsicum,.....640
Black Alder,.....632	Broccoli,.....61	Capsicum, Compound Plas- ter of.....735
Blackberry,.....633	Broiling,.....35	Capsicum, Compound Tinc- ture of.....747
Black Cataract,.....489	Bromide of Potassium,.....686	Capsicum, Tincture of.....750
Black Cohosh,.....633	Bronchitis, Acute.....262	Caraway,.....640
Black Cohosh, Compound Pills of.....732	Bronchitis, Chronic.....264	Carbonate of Ammonia,.....626
Black Cohosh, Compound Tincture of.....745	Bronchocele,.....486	Carbonate of Potassa,.....684
Black Cohosh, Tincture of.....750	Broth,.....43	Carbonate of Zinc, impure,.....711
Black Currants,.....67	Broth, Veal.....41	Carbonic Acid Gas, Poison- ing by.....617
Black Haw,.....634		Carbuncle,.....480
Black Oxide of Iron,.....664		
Black Pepper,.....634		
Black Root,.....668		
Black Walnut,.....638		

- Carcinoma, 458
 Cardamom, 640
 Carditis, 278
 Caries, 587
 Carrot, 62
 Carrot Poultice, 715
 Carrot, Wild, 707
 Castile Soap, 695
 Castor, 640
 Castor, Ammon. Tincture of 744
 Castor Oil, 640
 Catalepsy, 355
 Cataplasms, 715
 Catarract, Black 489
 Catarrh, 266
 Catarrh, Chronic 269
 Catarrh of the Bladder, 313
 Catarrh Snuff, 269
 Catarrhal Ophthalmia, . . . 239
 Catechu, 641
 Catechu, Tincture of 750
 Catnip, 641
 Cauliflower, 60
 Caulophyllin, 636
 Causes of Febrile Diseases, 175
 Caustic, Mild Vegetable 685, 716
 Caustic Potash, 684
 Caustic, Strong Vegetable
 685, 716
 Caustics, 716
 Cayenne Pepper, 640
 Cedar Apples, 689
 Cedar, Red 689
 Celery, 63
 Cellular Dropsy, 341
 Cerate, Calamine 717
 Cerate, Croton Oil 717
 Cerate, Resin 717
 Cerate, Simple 718
 Cerate, Turner's 717
 Cerates, 717
 Cessation of Menstruation, . 515
 Chafings, 615
 Chalk, Prepared 670
 Chamomile, 641
 Chancre, 604
 Change of Life, 515
 Charcoal, 642
 Charcoal, Comp. Powder of 737
 Charcoal Poultice, 715
 Cheese, 47
 Cherries, 66
 Cherry, Wild 708
 Chest, Dropsy of the 336
 Chestnuts, 70
 Chicken Pox, 230
 Chicken Soup, 42
 Chickweed, Red 689
 Chilblain, 505
 Child, Attentions to after
 Birth, 545
 Child-bed Fever, 305
 Child, Dressing the 545
 Child, Washing the 545
 Child, Weaning the 547
 Children, Convulsions of 356
 Children, Diseases of 544
 Chlorate of Potassa, 685
 Chloride of Gold and Soda, 655
 Chloride of Iron, Tinc. of 750
 Chloride of Lime, 670
 Chloride of Sodium, 696
 Chloride of Zinc, 711
 Chlorosis, 516
 Chloroform, 642
 Chocolate, 84
 Cholera, Asiatic 412
 Cholera Infantum, 423
 Cholera Mixture, Greenhow's 744
 Cholera Morbus, 417
 Cholera Pills, 733
 Chordee, 316
 Choreia, 363
 Chronic Acid, 642
 Chronic Amenorrhea, 510
 Chronic Bronchitis, 264
 Chronic Catarrh, 269
 Chronic Coryza, 269
 Chronic Cystitis, 313
 Chronic Diarrhea, 423
 Chronic Disease of the Liver, 296
 Chronic Disease of the Spleen, 299
 Chronic Dysentery, 292
 Chronic Enteritis, 287
 Chronic Gastritis, 281
 Chronic Hepatitis, 296
 Chronic Hydrocephalus, 335
 Chronic Inflammation of the
 Bladder, 313
 Chronic Inflammation of the
 Intestines, 287
 Chronic Inflammation of the
 Kidneys, 304
 Chronic Inflammation of the
 Neck of the Bladder, 315
 Chronic Inflammation of the
 Peritoneum, 310
 Chronic Inflammation of the
 Stomach, 281
 Chronic Laryngitis, 256
 Chronic Menorrhagia, 514
 Chronic Nephritis, 304
 Chronic Peritonitis, 310
 Chronic Pleurisy, 277
 Chronic Rheumatism, 325
 Chronic Splenitis, 299
 Churros, 658
 Cicuta Maculata, 683
 Cider, 85
 Cimicifugin, 634
 Cinchonia, 680
 Cinnamon, 74, 642
 Cinnamon, Tincture of 751
 Citrate of Iron, 664
 Citrate of Iron and Quinia, 664
 Citric Acid, 643
 Clams, 43
 Clap, 315
 Classification of Medicines, 619
 Clavus, 504
 Cleanliness, 125
 Cleavers, 643
 Clergyman's Sore Throat, . 256
 Clothing, 101
 Clover, Red 689
 Cloves, 74, 643
 Clysters, 722
 Cochineal, 644
 Cocoa, 85
 Cod-liver Oil, 644
 Coffee, 82
 Cohosh, Black 633
 Cohosh, Blue 635
 Colchicum, 644
 Colchicum, Compound Tinc-
 ture of 746
 Colchicum Seed, Tincture of 751
 Coleothar, 665
 Cold Bath, 130
 Cold Cream, 717
 Colds, 266
 Colic, 403
 Colic, Bilious 404
 Colic, Flatulent 403
 Colic, Lead 406
 Colic, Painter's 406
 Colica Pictorum, 406
 Collarbone, Dislocation of . 575
 Collarbone, Fracture of 560
 Collecting and Drying of
 Plants, 618
 Collodion, 644
 Colo-rectitis, 288
 Cologne, 744
 Colombo, 644
 Colombo, American 644
 Colt'sfoot, 708
 Comedones, 501
 Comfrey, 644
 Common Liniment, 724
 Common Silkweed, 645
 Common Strengthening Plas-
 ter, 735
 Compound Acetated Tincture
 of Bloodroot, 744
 Balsam of Sulphur, 714
 Cajuput Mixture, 728
 Capsicum Liniment, 724
 Capsicum Plaster, 735
 Clyster of Assafetida, 723
 Clyster of Lobelia, 723
 Clyster of Prickly-Ash, 723
 Clyster of Senna, 723
 Copaiba Mixture, 728
 Confection of Senna, 718
 Dislocations, 573
 Electuary of Senna, 718
 Ethereal Lotion, 727
 Fractures, 558
 Infusion of Geranium, 721
 Infusion of Parsley, 721
 Infusion of Sage, 722
 Infusion of Trailing Ar-
 butus, 722
 Lead Ointment, 731
 Lead Plaster, 735
 Liniment of Oil of Am-
 ber, 724
 Liniment of Oil of Stil-
 lingia, 724
 Lotion of Golden Seal, 726
 Lotion of Zinc, 726
 Mixture of Bloodroot, 729
 Mixture of Camphor, 729
 Myrrh Lotion, 726
 Ointment of Bayberry, 731
 Ointment of Iodine, 731
 Ointment of Oxide of
 Zinc, 731
 Ointment of Sulphur, 732
 Pills of Aconite, 732
 Pills of Aloes, 732
 Pills of Assafetida, 732
 Pills of Black Cohosh, 732
 Pills of Camphor, 733
 Pills of Dandelion, 733
 Pills of Ferrocyanuret of
 Iron, 733
 Pills of High Cranberry, 733
 Pills of Hyoscyamus, 733
 Pills of Leptandrin, 733

Comp. Pills of Motherwort, .733	Constitutional Syphilis, .607	Dementia, .372
Pills of Podophyllin, .734	Consumption, .468	Dewberry, .633
Pills of Quinia, .734	Consumption of the Bow- els, .310, 477	Diabetes, .436
Pills of Soap, .734	Contused Wounds, .554	Diachylon, .736
Pills of Valerian, .734	Convulsions during Preg- nancy, .524	Diaphoretic Powder, .737
Plaster of Belladonna, 735	Convulsions of Children, .356	Diaphoretics in Fevers, .179
Powder of Camphor, .737	Cooking, Modes of, .34	Diarrhea, .421
Powder of Charcoal, .737	Cooling Lotion, .727	Diarrhea, Chronic, .423
Powder of Golden Seal, 737	Cooling Wash, .726	Diarrhea, Mexican, .287
Powder of Hydrastin, .737	Copaiba, Balm of, .628	Difficult Menstruation, .511
Powder of Ipecacuanha and Opium, .737	Copper, .645	Difficulty in Urinating, dur- ing Pregnancy, .525
Powder of Jalap, .737	Copper, Subacetate of, .645	Digitalis, .647
Powder of Leptandrin, 738	Copper, Sulphate of, .645	Digitalis, Tincture of, .751
Powder of Lobelia, .738	Copperas, .666	Dioscorein, .708
Powder of Podophyllin, 738	Cord, Bleeding from, .550	Discharges of Blood, Invol- untary, .451
Powder of Quinia, .738	Cordial, Mother's, .739	Disease, Bright's, .432
Powder of Rhubarb, .738	Cordial, Neutralizing, .740	Disease, External Signs of, in Infants, .548
Powder of Rhubarb and Potassa, .738	Corn, Indian, .54	Disease, Hip, .479
Powder of Xanthoxylin, 738	Corn, Turkey, .704	Disease of the Liver, Chronic 296
Resin Plaster, .735	Cornine, .647	Disease of the Spleen, Chron- ic, .299
Soda Lotion, .727	Corns, .504	Disease, Venereal, .604
Solution of Iodine, .725	Costiveness, .150, 425, 524	Diseased Bone, .587
Spirits of Lavender, .747	Cotton, .645	Diseased Mesenteric Glands, 477
Syrup of Partridgeber- ry, .739	Cotton Bark, Tincture of, .751	Diseases, Dropsical, .331
Syrup of Rhubarb and Potassa, .740	Cough Drops, .264, 729	Diseases, Febrile, .173
Syrup of Sarsaparilla, 740	Cough during Pregnancy, .525	Diseases, Gastric, .395
Syrup of Spikenard, .740	Cough Remedies, .264	Diseases, Infantile, .549
Syrup of Stillingia, .741	Cow-pox, .228	Diseases, Inflammatory, .231
Syrup of Yellow-Dock, 741	Crabs, .42	Diseases, Intestinal, .395
Tar Plaster, .735	Cramp, .365	Diseases, Nervous, .344
Tincture of Assafetida, 745	Cramp-bark, .659	Diseases of Children, .544
Tincture of Benzoin, .745	Cramp in the Leg, .366	Diseases, Constitutional, .458
Tincture of Black Co- hosh, .745	Cramp in the Stomach, .366	Diseases of Pregnancy, .524
Tincture of Blue Cohosh, 745	Cramps during Pregnancy, .366	Diseases of the Skin, .491
Tincture of Camphor, .745	Cranberries, .67	Diseases of the Stomach and Bowels, .395
Tincture of Capsicum, .747	Cranberry, High, .659	Diseases of the Urinary Or- gans, .432
Tincture of Colchicum, 746	Cranesbill, .654	Diseases of Women, .506
Tincture of Gentian, .746	Crawley, .646	Diseases, Surgical, .551
Tincture of Goldenseal, 746	Cream, .46	Dislocation of Ankle Joint, 584
Tincture of Hemlock, .746	Cream of Tartar, .684	Collar Bone, .575
Tincture of High Cran- berry, .746	Creosote, .646	Elbow Joint, .577
Tincture of Iodine, .746	Cresses, .64	Fingers and Toes, .578
Tincture of Lavender, .747	Crocus Martis, .665	Hip-joint, .578
Tincture of Lobelia, .747	Croton Oil, .646	Knee-joint, .583
Tincture of Lobelia and Capsicum, .747	Croton Oil Cerate, .717	Knee-pan, .583
Tincture of Myrrh, .747	Croton Oil Liniment, .724	Lower-jaw, .574
Tincture of Rhubarb, .747	Croup, .258	Shoulder, .575
Tincture of Senna, .748	Crowfoot, .654	Wrist, .578
Tincture of Tamarac, .748	Crusta Lactea, .492	Dislocations, .571
Tincture of Virginia Snakeroot, .748	Cubebs, .646	Dislocations, Compound, .573
Wine of Comfrey, .728	Cucumbers, .62	Dislocations, Simple, .571
Wine of Goldenseal, .728	Culver's Physic, .668	Diuretic Drops, .728
Compresses, Wet, .778	Currants, Black, .67	Diuretic Pills, .734
Condiments, .70	Currants, Dried, .67	Diuretics in Fevers, .180
Condition of the Tongue in Fevers, .182	Currants, Red, .67	Dock, Yellow, .710
Confections, .718	Cyanuret of Potassium, .686	Dogwood, .647
Congestive Chill, .189	Cynanche Maligna, .247	Dogwood, Swamp, .701
Congestive Fever, .195	Cynanche Parotidæ, .253	Doses of Medicines, .714
Conium Maculatum, Tinc- ture of, .754	Cynanche Trachealis, .258	Douche, .770
Conserves, .718	Cypripedin, .711	Douche, Head, .771
Constipation, .150, 425	Cystine Deposits in Urine, .450	Douche, Pail, .764
Constipation during Preg- nancy, .524	Cystitis, .312	Dow-worm, .493
Constitutional Diseases, .458	Cystitis, Chronic, .313	Dressing the Child, .545
	Dandelion, .647	Dressing the Navel, .545
	Dandelion, Comp. Pills of, .733	Dried Alum, .624
	Dates, .66	Dried Beef, .37
	Deafness, .490	Dried Currants, .67
	Decoctions, .718	Dried Sulphate of Iron, .666
	Deer's horn, Calcined, .638	
	Delirium Tremens, .376	
	Delivery, .529—532	

- Dripping Sheet,.....761
 Drops, Cough.....264
 Drops, Diuretic.....728
 Drops, Hot.....747
 Drops, Hunn's.....728
 Dropsical Diseases.....331
 Dropsy, Cellular.....341
 Dropsy, General.....341
 Dropsy of the Abdomen,.....339
 Brain,.....331-335
 Chest,.....336
 Head,.....331-335
 Heart,.....338
 Scrotum,.....343
 Dry Mortification,.....551
 Drying of Plants,.....618
 Dumb Ague,.....186
 Dumplings,.....58
 Dwarf Elder,.....648
 Dysentery,.....288
 Dysentery, Chronic.....292
 Dysmenorrhea,.....511
 Dyspepsia,.....395
 Dysuria,.....440

 Ear, Inflammation of.....238
 Ears, Foreign Bodies in.....490, 616
 Egg-Plant,.....62
 Eggs,.....43, 648
 Elaterium,.....648
 Elbow, Fracture of.....563
 Elbow-Joint, Dislocation of.....577
 Elder,.....648
 Elder, Dwarf.....648
 Elder, Prickly.....687
 Elecampane,.....649
 Electro-Magnetism,.....649
 Electuary of Senna, Comp.....718
 Electuary, Pile.....718
 Elixir Paregoric,.....744
 Elixir Salutis,.....748
 Elixir Vitriol,.....748
 Elm Poulitice,.....716
 Elm, Slippery.....695
 Emetics in Fevers,.....177
 Emetic Powder,.....738
 Emetic Tincture, Acetous.....744
 Endocarditis,.....278
 Enlarged Tonsils,.....488
 Enlargement of the Heart,.....487
 Enteritis,.....285
 Entozoic Powder,.....738
 Enuresis,.....442
 Epidemic Cholera,.....412
 Epilepsy,.....350
 Epistaxis,.....452
 Ergot,.....649
 Ergot, Tincture of.....751
 Erigeron Mixture,.....729
 Eruptive Fevers,.....215
 Erysipelas,.....232
 Essences,.....718
 Ether,.....650
 Ether, Hydriodic.....661
 Ethereal Lotion, Compound.....727
 Ethereal Oil of Capsicum,.....640
 Ethyle, Iodide of.....661
 Eupurpurin,.....688
 Exercise,.....107
 Excessive Menstruation,.....513
 Excoriated Nipples,.....533
 Excoriation of the Navel,.....550
 Excoriations and Chafings,.....615
 Expectorant Tincture, King's.....747
 External Signs of Disease in
 Infants,.....548
 Extract, Fluid Neutralizing.....720
 Extract of Rhubarb and Po-
 tassa, Fluid.....720
 Extract of Spigelia and Sen-
 na, Fluid.....720
 Extracts,.....718
 Extracts, Fluid.....719
 Eye and Ear Bath,.....773
 Eyes, Attention to the.....145
 Eyes, Inflammation of.....239
 Eye-water, Stimulating.....726
 Evaporating Lotion,.....727

 Face, Blotched.....500
 Fainting,.....392
 Falling of the Bowel,.....597
 Womb,.....522
 Falling Sickness,.....350
 False Bittersweet,.....650
 False Grape,.....625
 False Pains,.....529
 False Unicorn-root,.....658
 Fats,.....49
 Fats, Fixed.....49
 Fear,.....155
 Febrile Diseases,.....173
 Auxiliary Treatment of.....180
 Causes of.....175
 Condition of Tongue in.....182
 Diaphoretics in.....179
 Diuretics in.....180
 Emetics in.....177
 General Treatment of.....176
 Prognosis of.....176
 Purgatives in.....177
 Symptoms of.....173
 Febris Intermittens,.....185
 Feeding, Artificial.....546
 Feet, Attentions to the.....142
 Felon,.....588
 Female Regulator,.....669
 Fern, Sweet.....702
 Ferrocyanuret of Iron,.....664
 Pills of,.....733
 Fever and Ague,.....185
 Fever, Bilious.....191
 Childbed.....305
 Congestive.....195
 Hectic.....214
 Infantile Remittent.....212
 Intermittent.....185
 Lung.....270
 Miliary.....231
 Milk.....533
 Pernicious.....198
 Puerperal.....305
 Remittent.....191
 Scarlet.....215
 Spotted.....211
 Typhoid.....207
 Typhus.....204
 Yellow.....199
 Feverfew,.....650
 Fevers, Eruptive.....215
 Fevers, Tongue in.....182
 Figs,.....68
 Figwort,.....650
 Fingers, Dislocation of.....578
 Fingers, Fracture of.....565
 Firewood,.....650
 Firing,.....651
 Fish,.....42
 Fissure of the Anus,.....595
 Fistula in Ano,.....592
 Fits of Children,.....356
 Five-flowered Gentian,.....653
 Five Leaves,.....625
 Fixed Fats,.....49
 Fixed Oils,.....49
 Flag, Blue.....636
 Flag, Sweet.....702
 Flatulent Colic,.....403
 Flaxseed,.....651
 Fleabane, Canada.....639
 Flies, Spanish.....639, 697
 Floodings,.....534
 Flow, Lochial.....532
 Flowers of Sulphur,.....700
 Fluid Neutralizing Extract,.....720
 Extract of Rhubarb and
 Potassa,.....720
 Extract of Spigelia and
 Senna,.....720
 Extracts,.....719
 Fluor-Albus,.....518
 Flux, Bloody.....288
 Follicular Inflammation of
 the Mouth,.....248
 Fomentations,.....721, 776
 Food,.....22
 Kind of.....27
 Preparation of.....34
 Quality of.....26
 Quantity of.....24
 Forearm, Fracture of.....564
 Foreign Bodies in the Ear,.....490
 Nose,.....615
 Windpipe,.....615
 Foxglove,.....647
 Fracture of the Bones of the
 Foot,.....571
 Fracture of the Breast-bone,.....566
 Collar-bone,.....560
 Elbow,.....563
 Fingers,.....565
 Forearm,.....564
 Hand,.....565
 Knee-pan,.....568
 Leg,.....569
 Lower-jaw,.....559
 Nose,.....558
 Ribs,.....565
 Shoulder-blade,.....561
 Thigh Bone,.....566
 Upper arm,.....562
 Wrist,.....565
 Fractures,.....556
 Compound,.....558
 Simple,.....556
 Framboesia,.....484
 Freckles,.....502
 Fritters,.....58
 Frostbite,.....506
 Frostweed,.....652
 Frying,.....36
 Fumigation of Sick-room,.....137
 Furor Uterinus,.....385
 Furunculus,.....503

 Gallic Acid,.....652
 Galls,.....652
 Gallweed,.....653
 Gamboge,.....652
 Ganglion,.....589
 Game,.....41
 Gangrene,.....551

- Gangrenous Inflammation of the Mouth, 251
 Garlic, 63, 653
 Garlic, Syrup of 742
 Gastric Diseases, 395
 Gastritis, 280
 Gastritis, Chronic 281
 Gastrodynia, 366
 Gelatus, 506
 Gelseminum, 710
 Gelseminum, Tincture of 752
 General Dropsy, 341
 General Observations on Hydropathic Treatment, 781
 General Treatment of Fevers, 176
 Gentian, 653
 Gentian, Comp. Tincture of 746
 Gentian, Five-flowered 653
 Gentian, Tincture of 752
 Gentianin, 653
 Geranium, 654
 Geranium, Comp. Infusion of 721
 Geraniin, 654
 Giddiness in the Head, 393
 Gill over the Ground, 656
 Gin, 93
 Ginger, 73, 654
 Ginger Beer, 86
 Ginger, Syrup of 742
 Ginger, Tincture of 752
 Ginger, Wild 708
 Gingerbread, 59
 Ginseng, 654
 Glauber's Salts, 696
 Gleet, 319
 Glossary, 782
 Gluten, Vegetable 49
 Glycerin, 654
 Goitre, 486
 Gold and Soda, Chloride of 655
 Goldenrod, Hardleaf 658
 Golden Seal, 655
 Compound Powder of .. 737
 Compound Tincture of 746
 Compound Wine of 728
 Golden Tincture, 746
 Gondret's Vesicating Ammoniacal Ointment, ... 626
 Gonorrhea, 315
 Gooseberries, 67
 Gout, 328
 Grains of Paradise, Tinc. of 752
 Grapes, 67
 Gravel, 443
 Gravel, Oxalic 447
 Gravel, Phosphatic 446
 Gravel, Uric Acid 445
 Green Sickness, 516
 Green Vitriol, 666
 Greenhow's Cholera Mixture, 744
 Greens, 61
 Grief, 157
 Grocer's Itch, 496
 Ground Centaury, 656
 Ground Ivy, 656
 Grubs in the Skin, 501
 Gruel, Indian Meal 54
 Gruel, Oatmeal 52
 Guaiacum, 656
 Aromatic Tincture of .. 744
 Volatile Tincture of .. 756
 Gum, 50
 Gum Ammoniac, 626
 Gum Arabic, 656
 Gum Arabic, Mucilage of .. 657
 Gum Hemlock, 657
 Gum, Red, 549
 Gum, Sweet, 702
 Gum, Yellow, 549
 Gunshot Wounds, 554
 Gutta Serena, 489
 Hair, Attentions to the 137
 Haircap Moss, 658
 Half-bath, 764
 Ham, 39
 Hand, Fracture of 565
 Hardleaf Golden Rod, 658
 Hardness of Breasts in Infants, 550
 Harlem Oil, 714
 Hartshorn, Spirits of 626
 Head Bath, 772
 Head Douche, 771
 Head, Giddiness of 393
 Head, Scald 493
 Headache, 427
 Headache during Pregnancy, 524
 Headache, Nervous 427
 Headache, Sick 427
 Health, 9
 Health, How influenced by Occupations, 159
 Heart, Dropsy of the 338
 Enlargement of 487
 Hypertrophy of 487
 Inflammation of 278
 Palpitation of 394
 Heartburn, 409
 During Pregnancy, 409
 Heart's Ease, 678
 Hectic Fever, 214
 Hellebore, American 624
 Hellebore, White 706
 Helonias, 658
 Hemastasis, 657
 Hematemesis, 455
 Hematuria, 456
 Hemeriania, 321
 Hemlock, Comp. Tincture of 746
 Hemlock, Gum 657
 Hemlock, Poison 682
 Hemlock, Water 683
 Hemlock, Tincture of 752
 Hemoptysis, 453
 Hemorrhage from the Bladder, 456
 Kidneys, 456
 Lungs, 453
 Nose, 452
 Stomach, 455
 Womb, 534
 Hemorrhages, 451, 534
 Hemorrhoids, 595
 Hemp, 658
 Hemp, Indian 662
 Hemp, White Indian 701
 Henbane, 661
 Henbane, Tincture of 752
 Hepar, 686
 Hepatitis, Acute 293
 Hepatitis, Chronic 296
 Hernia, 601
 Hernia, Umbilical 550
 Herpes, 491
 Herpes Circinnatus, 491
 Herpes Zoster, 491
 Hiccough, 392
 High-cranberry, 659
 Compound Pills of 733
 Compound Tincture of 746
 Hip Disease, 479
 Hip-joint, Dislocations of .. 578
 Hippuric Acid deposits in Urine, 450
 Hoarhound, 659
 Honey, 51
 Hooping-Cough, 390
 Hops, 659
 Hops, Ointment of 730
 Hordeolum, 503
 Horsemint, 660
 Horseradish, 73, 660
 Hose-bath, 770
 Hot Drops, 747
 Hound's Tongue, 660
 Houseleek, 660
 Hunn's Drops, 728
 Hydrangea, 660
 Hydrarthrus, 477
 Hydrastin, 665
 Compound Powder of .. 737
 Hydrated Sesquioxide of Iron, 664
 Hydriodic Ether, 661
 Hydrocele, 343
 Hydrocephalus, Acute 331
 Hydrocephalus, Chronic ... 335
 Hydrochlorate of Ammonia, 626
 Hydrochloric Acid, 661
 Hydrogen, Sulphuretted ... 47
 Hydropathic Treatment, General directions for ... 781
 Hydropathic Appliances, ... 760
 Hydropericardium, 338
 Hydrophobia, 368
 Hydrothorax, 336
 Hyoseyamia, 661
 Hyoseyamus, 661
 Compound Pills of 733
 Tincture of 752
 Hypertrophy of the Heart, .. 487
 Hypochondria, 378
 Hyposulphite of Soda, 697
 Hyssop, 662
 Hysteria, 360
 Hysterics, 360
 Ice-Cream, 46
 Ice Plant, 662
 Icterus, 410
 Immoderate Flow of Menses, 513
 Impotency, 384
 Impure Carbonate of Zinc, .. 711
 Incontinence of Urine, 442
 Incubus, 394
 Indian Corn, 54
 Indian Hemp, 662
 Indian Hemp, White 701
 Indian Meal Gruel, 54
 Indian Turnip, 662
 Indigestion, 395
 Indigo, Wild 708
 Infantile Diseases, 549
 Purulent Ophthalmia, .. 243
 Remittent Fever, 212
 Infants, Bleeding from Cord of 550
 Bleeding from Navel of 550
 Excoriation of Navel of 550
 Jaundice of 549

- Infants, Red Gum in.....549
 Rupture of Navel of.....550
 Swelling of Breasts of.....550
 Umbilical Hernia of.....550
 Yellow Gum in.....549
 Inflammation of the Bladder, 312
 Bladder, Chronic.....313
 Bowels,.....285
 Bowels, Chronic.....287
 Brain,.....235
 Breasts,.....541
 Ears,.....238
 Eyes,.....239
 Heart,.....278
 Intestines,.....285
 Intestines, Chronic.....287
 Iris,.....243
 Kidneys,.....301
 Kidneys, Chronic.....304
 Larynx,.....254
 Larynx, Chronic.....256
 Liver,.....293
 Liver, Chronic.....296
 Lungs,.....270
 Mouth,.....248
 Mouth, Follicular.....248
 Mouth, Gangrenous.....251
 Mouth, Ulcerative.....250
 Neck of the Bladder,
 Chronic.....315
 Peritoneum,.....305
 Peritoneum, Chronic.....310
 Pharynx,.....247
 Pleura,.....275
 Pleura, Chronic.....277
 Spleen,.....298
 Spleen, Chronic.....299
 Stomach,.....280
 Stomach, Chronic.....281
 Urethra,.....315
 Windpipe,.....262
 Windpipe, Chronic.....264
 Womb,.....311
 Inflammatory Diseases,.....231
 Rheumatism,.....320
 Sore Throat,.....245
 Influence of Occupations on
 Health,.....159
 Influenza,.....266
 Infusion of Geranium, Comp. 721
 Parsley, Compound.....721
 Sage, Compound.....722
 Trailing Arbutus, Comp. 722
 Infusions,.....721
 Injections,.....722, 779
 Insanity,.....371
 Insects, Bites of.....555
 Intermittent Fever,.....185
 Interrupted Menstruation,.....507
 Intestinal Diseases,.....395
 Inverted Toe Nail,.....613
 Involuntary Discharges of
 Blood,.....451
 Iodide of Ethyle,.....661
 Iron,.....665
 Iron, Solution of.....725
 Potassium,.....686
 Zinc,.....711
 Iodine,.....663
 Compound Ointment of.....731
 Compound Solution of.....725
 Compound Tincture of.....746
 Pills,.....734
 Tincture of.....752
 Ipecacuanha,.....663
 American.....625
 and Opium, Compound
 Powder of.....737
 Syrup of.....742
 Iridin,.....636
 Iritis,.....243
 Iron,.....664
 Acetate of.....664
 Ammonio-Tartrate of.....664
 and Quinia, Citrate of.....664
 and Quinia, Tartrate of.....666
 Black Oxide of.....664
 by Hydrogen,.....665
 Citrate of.....664
 Dried Sulphate of.....666
 Ferrocyanuret of.....664
 Hydrated Sesquioxide
 of.....664
 Iodide of.....665
 Lactate of.....665
 Phosphate of.....665
 Precipit. Carbonate of.....665
 Protoxide of.....665
 Prussiate of.....664
 Red Oxide of.....665
 Sesquioxide of.....665
 Sulphate of.....666
 Tincture of Acetate of.....749
 Tincture of Chloride of.....750
 Tincture of Muriate of.....750
 Ironweed,.....666
 Ironwood,.....666
 Irrigation,.....775
 Irritating Plaster,.....735
 Ischuria,.....440
 Isinglass,.....667
 Itch,.....498
 Itch, Barber's.....496
 Itching of Genitals, during
 Pregnancy,.....525
 Ivy, American.....625
 Big.....694
 Ground.....656
 Jackson's Itch,.....496
 Jalap,.....667
 Jalap, Compound Powder of.....737
 Jamestown weed,.....700
 Jaundice,.....410
 Jaundice of Infants,.....549
 Jaw, Dislocat. of the Lower.....574
 Jaw, Fracture of the Lower.....559
 Jelly, Calves' Feet.....41
 Jerusalem Artichoke,.....60
 Jessamine, Yellow.....710
 Joy,.....158
 Juglandin,.....638
 Juniper,.....667
 Kidneys,.....153
 Attentions to the.....153
 Bleeding from.....456
 Bright's Disease of.....432
 Inflammation of.....301
 Inflammation of, Chron. 304
 Kind of Food,.....27
 King's Evil,.....464
 King's Expectorant Tincture, 747
 Kino,.....667
 Knee-joint, Dislocation of.....583
 Knee-pan, Dislocation of.....583
 Fracture of.....568
 Labor,.....529
 Management of.....530
 Lacerated Wounds,.....554
 Lactate of Iron,.....665
 Lactucarium,.....669
 Ladies' Slipper, Yellow.....711
 Lamb,.....41
 Land Scurvy.....481
 Lapis Calaminaris,.....711
 Larch, American.....625
 Large Flowering Spurge,.....667
 Laryngitis,.....254
 Chronic,.....256
 Laudanum,.....753
 Laurel, Sheep.....694
 Sheep, Tincture of.....754
 Lavender, Comp. Spirits of.....747
 Compound Tincture of.....747
 Lead,.....668
 Acetate of.....668
 Colic,.....406
 Ointment, Compound.....731
 Plaster,.....736
 Plaster, Compound.....735
 Plaster, Red Oxide of.....736
 Red.....668
 Red Oxide of.....668
 Sugar of.....668
 Leek,.....63
 Leg and Arm Baths.....775
 Leg, Fractures of the.....569
 Leg, Milk.....537
 Lemon Syrup,.....741
 Lemons,.....68, 668
 Lentigo,.....502
 Leopard's bane,.....627
 Leptandra,.....668
 Leptandrin,.....669
 Compound Pills of.....733
 Compound Powder of.....738
 Tincture of.....752
 Lettuce,.....63, 669
 Leucorrhœa,.....518
 Life root,.....669
 Life, Turn of.....515
 Limbs, Swelling of, during
 Pregnancy,.....525
 Lime,.....670
 Chloride of.....670
 Water,.....670
 Limes,.....63, 668
 Liniment, Aconite.....724
 Camphor.....724
 Common.....724
 Compound Capsicum.....724
 Croton Oil.....724
 of Oil of Amber, Comp. 724
 of Stillingia, Compound 724
 Rhenmatic.....724, 745
 White.....725
 Liniments,.....724
 Linseed Oil,.....651
 Liquid Physic, White.....729
 Liquor Ammonia,.....625
 Liquor Potassa,.....685, 725
 Liquorice,.....670
 Liquors,.....725
 Liver, Inflammation of.....293
 Inflam. of, Chronic.....296
 of Sulphur,.....686
 Lobelia,.....670
 and Capsicum, Com-
 pound Tincture of.....747
 Compound Clyster of.....723

- Lobelia, Comp. Powder of..738
 Compound Tincture of..747
 Poulitice,716
 Tincture of.....753
 Vinegar of.....756
 Lobsters,42
 Lochial Flow,.....532
 Locked Jaw,.....367
 Logwood,671
 Lotion, Borax.....726
 Borax with Morphia..726
 Compound Ethereal...727
 Compound Myrrh....726
 Compound Soda,....727
 Cooling727
 Evaporating727
 of Golden Seal, Comp..726
 of Zinc, Compound...726
 Lotions,726
 Love,155
 Lower Jaw, Dislocation of..574
 Fractures of.....559
 Lumbago,321
 Lunar Caustic,.....674
 Lung Fever,270
 Lungs, Bleeding from....453
 Hemorrhage from....453
 Inflammation of270
 Lupulin,659
 Tincture of.....753
 Mace.....675
 Macrotin,634
 Magnesia,671
 Calcined.....671
 Sulphate of.....671
 Maidenhair,.....671
 Maize,54
 Malt Liquors,.....86
 Management of Labor,....530
 Mandrake,671
 Mania,371
 Mania, Puerperal.....542
 Manner of Eating,.....28
 Marsh-mallow,672
 Marsh-rosemary,672
 Masked Ague,.....186
 Masterwort,.....672
 Mastication,.....30
 Masturbation,.....380
 Materia Medica,.....618
 May Apple,.....671
 Mayer's Ointment,.....731
 Meadow Cabbage,.....695
 Measles,221
 Measures and Weights,....712
 Meconium, Purging off...545
 Medicated Waters,.....727
 Wines,728
 Medicines, Classification of..619
 Doses of.....714
 Melancholy,.....376
 Melons,69
 Menorrhagia,.....513
 Acute513
 Passive.....514
 Menses, Immoderate Flow of 513
 Menstruation,506
 Absent507
 Cessation of.....515
 Difficult511
 Excessive.....513
 Interrupted.....507
 Painful511
 Menstruation, Suppressed..509
 Mentagra,496
 Mesenteric Glands, Diseased 477
 Metritis,.....311
 Mexican Diarrhea,.....287
 Microscope, Value of.....167
 Mild Vegetable Caustic, 685, 716
 Mild Zinc Ointment,.....731
 Miliary Fever,231
 Milk,44
 Milk Crust,.....492
 Milk Fever,.....533
 Milk-leg,537
 Milk Scall,.....494
 Milk Sickness,.....419
 Milk Solidified,44
 Milkweed,645
 Swamp.....701
 Mineral and Vegetable Poisons,616
 Mineral Waters, Artificial..80
 Minerals, Poisoning by...616
 Miscarriage,526
 Miscellaneous,756
 Mixture, Camphor.....728
 Compound Cajeput...728
 Compound Copaiba...728
 Erigeron729
 Greenhow's Cholera...744
 Bloodroot, Compound..729
 Camphor, Compound ..729
 Saline729
 Mixtures,728
 Modes of Cooking,.....34
 Molasses,51
 Monkshood,622
 Monomania,372
 Morphia,677
 Sulphate of677
 Valerianate of677
 Mortification,551
 Mortification, Dry551
 Mother's Cordial,.....739
 Motherwort,673
 Compound Pills of ..733
 Mountain Pink,.....703
 Mouth-bath,773
 Mouth, Follicular Inflammation of248
 Gangrenous Inflammation of251
 Inflammation of248
 Nursing Sore540
 Ulcerated Sore250
 Ulcerative Inflammation of250
 Mucilage of Gum Arabic, ..657
 Muguet,250
 Mulberries,69
 Mullein,673
 Mumps,253
 Muriate of Ammonia,.....626
 Gold and Soda,.....655
 Iron, Tincture of...750
 Soda,696
 Muriatic Acid,661
 Mushroom,63
 Musk, Tincture of753
 Mussels,43
 Mustard,73, 673
 Mutton,38
 Mutton Tea,.....38
 Myricin,630
 Myrrh,673
 Myrrh, Compound Tincture 747
 Lotion, Compound....726
 Tincture of753
 Nails, Attentions to the....144
 Natural Passions,.....155
 Navel, Bleeding from the ..550
 Dressing the.....545
 Excoriation of the...550
 Rupture of the.....550
 Neck, Big486
 Neck of the Bladder, Chronic Inflammation of315
 Neck, Swelled,.....486
 Necrosis,587
 Negro Cachexy,.....485
 Negro Poisoning,.....486
 Nephritis, Acute301
 Nephritis, Chronic304
 Nerve Root,711
 Nervous Diseases,.....344
 Nervous Headache,427
 Neuralgia,543
 Neutralizing Cordial,740
 Neutralizing Extract, fluid, 720
 Neutralizing Powder,....738
 Nightmare,394
 Nipples, Excoriated.....533
 Nitrate of Potassa,685
 Nitrate of Silver,.....674
 Nitre,685
 Nitre, Sweet Spirits of...698
 Nitric Acid,674
 Nitro-hydrochloric Acid, ...674
 Nitro-muriatic Acid,.....674
 Nose-bath,773
 Nose, Bleeding from452
 Foreign bodies in.....615
 Fracture of558
 Nurse, Wet.....546
 Nursing Sore Mouth,....540
 Nutmegs,74, 675
 Nuts, Oily70
 Nux Vomica,675
 Tincture of753
 Nymphomania,385
 Oak, Poison683
 Oak, White706
 Oatmeal Gruel,52
 Oats,52
 Occupations, their influence on Health,.....159
 Oil, Harlem714
 Oil of Cajeput,.....675
 Oil of Olives,676
 Oil of Stillingia, Compound Liniment of724
 Oil of Turpentine,.....676
 Oils, Fixed49
 Oily Nuts,70
 Oily Seeds,70
 Ointment, Compound Lead 731
 Compound Iodine....731
 Gondret's Vesicating Ammoniacal676
 Mayer's,731
 Mild Zinc731
 Acetate of Lead,.....729
 Aconite,729
 Bayberry,730
 Belladonna,.....730
 Bayberry, Compound ..731
 Hops,730

- Ointment of Oxide of Zinc, 730
 Oxide of Zinc, Comp., 731
 Poison Hemlock, 730
 Poke, 730
 Stramonium, 730
 Sulphate of Zinc, 730
 Sulphur, Compound, 732
 White Hellebore, 730
 Wild Indigo, 731
 Woodsoot, 731
 Ointments, 729
 Olive Oil, 766
 Onanism, 380
 Onion, 63, 676
 Ophthalmia, 239
 Catarrhal, 239
 Purulent, 241
 Purulent, Infantile, 243
 Scrofulous, 467
 Ophthalmia Tarsi, 241
 Opium, 677
 Camphorated Tinc. of, 744
 Tincture of, 753
 Opodeldoc, 724
 Oral Bath, 773
 Oranges, 68, 677
 Origanum, 678
 Otitis, 238
 Oxalic Acid, 678
 Oxalic Gravel, 447
 Oxide of Lead, Red, 668
 Oxide of Zinc, 711
 Ointment, 730
 Ointment, Compound, 731
 Oysters, 43
 Oysters, Vegetable, 62
 Ozone, 22

 Pack, Blanket, 768
 Pack, Wet Sheet, 766
 Pagliari's Styptic, 631
 Pail Douche, 764
 Pain in the Right Side during Pregnancy, 525
 Painful Breasts during Pregnancy, 526
 Painful Menstruation, 511
 Pains, After, 532
 Pains, False, 529
 Pains, True, 529
 Painter's Colic, 406
 Palpitation of the Heart, 394
 Palsy, 348
 Pancakes, 58
 Pansy, 678
 Paralysis, 348
 Paraphymosis, 316
 Paregoric, 744
 Parilla, Yellow, 711
 Parotitis, 253
 Parsley, 678
 Compound Infusion of, 721
 Parsnip, 61
 Partridge Berry, 678
 Compound Syrup of, 739
 Parturient Balm, 739
 Parturition, 529
 Passions, Natural, 155
 Passive Menorrhagia, 514
 Pastry, 58
 Peach, 66, 678
 Pears, 66
 Peas, 63
 Pennyroyal, 679
 Peony, 679
 Pepper, 74, 634
 Cayenne, 640
 Red, 640
 Water, 706
 Peppermint, 679
 Pericarditis, 278
 Peritoneum, Inflammation of, 305
 Inflammation of, Chronic, 310
 Peritonitis, Acute, 305
 Peritonitis, Chronic, 310
 Pernicious Fever, 198
 Pernio, 505
 Persimmon, 679
 Pertussis, 390
 Peru, Balsam, 629
 Peruvian Bark, 679
 Petty-morel, 695
 Pharmacy, 712
 Pharyngitis, 247
 Pharynx, Inflammation of, 247
 Phlegmasia Dolens, 537
 Phosphate of Iron, 665
 Phosphate of Quinia, 681
 Phosphatic Gravel, 446
 Phosphorus, 681
 Phrenitis, 235
 Phthisis Pulmonalis, 468
 Phthisic, 335
 Phymosis, 316
 Physic, Antibilious, 737
 Physic, Culver's, 668
 Physic, White Liquid, 729
 Pickles, 62, 75
 Pile Electuary, 718
 Piles, 595
 Piles during Pregnancy, 525
 Pills, 732
 Pills, Antidyspeptic, 732
 Cholera, 733
 Diuretic, 734
 Iodine, 734
 Aconite, Compound, 732
 Aloes, Compound, 732
 Assafetida, Compound, 732
 Black Cohosh, Comp., 732
 Camphor, Compound, 733
 Dandelion, Compound, 733
 Ferrocyanuret of Iron, Compound, 733
 High-cranberry, Comp., 733
 Hyoscyamus, Compound, 733
 Leptandrin, Compound, 733
 Motherwort, Compound, 733
 Podophyllin, Compound, 734
 Quinia, Compound, 734
 Soap, Compound, 734
 Valerian, Compound, 734
 Pimento, 75
 Pine Apple, 69
 Pink Root, 681
 Pipsisseway, 681
 Pitch, Burgundy, 637
 Pitch, Canada, 657
 Plantain, 682
 Plants, Collecting and Drying of, 618
 Plaster, Adhesive, 735, 736
 Bayberry, 734
 Common Strengthening, 735
 Compound Capsicum, 735
 Compound Lead, 735
 Compound Tar, 735
 Irritating, 735
 Plaster, Lead, 736
 Belladonna, Compound, 735
 Resin, Compound, 735
 Red Oxide of Lead, 736
 Resin, 736
 Plasters, 734
 Pleura, Inflammation of, 275
 Pleura, Inflammation of, Chronic, 277
 Pleurisy, 275
 Pleurisy, Chronic, 277
 Pleurisy Root, 682
 Pleuritis, 275
 Pleurodynia, 321
 Plums, 66
 Pneumonia, 270
 Pneumonia, Typhoid, 273
 Podagra, 328
 Podophyllin, 672
 Compound Pills of, 734
 Compound Powder of, 738
 Tincture of, 754
 Poison Hemlock, 682
 Ointment of, 730
 Tincture of, 754
 Poison Oak, 683
 Poison Sumach, 683
 Poison Vine, 683
 Poisoned Wounds, 555
 Poisoning by Carbonic Acid Gas, 617
 Poisoning by Minerals, 616
 Poisoning by Vegetables, 616
 Poisoning, Negro, 486
 Poisons, 616
 Mineral and Vegetable, 616
 Poke, 683
 Ointment of, 730
 Tincture of, 754
 Pokeroor Poulitice, 716
 Pollution, Self, 330
 Polypus, 599
 Pomegranate, 683
 Pond Lily, White, 707
 Poplar, 703
 Pork, 38
 Porrigo Favosa, 493
 Porrigo Larvalis, 492
 Porrigo Scutulata, 495
 Porter, 86
 Potash, Caustic, 684
 Potassa, 684
 Potassa and Soda, Tartrate, 697
 Bicarbonate of, 684
 Bichromate of, 684
 Bitartrate of, 684
 Carbonate of, 684
 Caustic, 684
 Chlorate of, 685
 Liquor, 685
 Nitrate of, 685
 Sesquicarbonate of, 685
 Solution of, 685
 Potassium, 686
 Potassium, Bromide of, 686
 Cyanuret of, 686
 Iodide of, 686
 Sulphuret of, 686
 Potato, 59
 Potato, Sweet, 60
 Poulitice, Carrot, 715
 Charcoal, 715
 Elm, 716
 Lobelia, 716

- Poultice, Pokeroot.....716
 Poultices,.....715
 Poultry,.....41
 Powder, Diaphoretic.....737
 Emetic.....738
 Entozoic.....738
 Neutralizing.....738
 of Camphor, Compound 737
 of Charcoal, Compound 737
 of Golden Seal, Comp. 737
 of Hydrastin, Comp. 737
 of Ipecacuanha and Opi-
 um, Compound.....737
 of Jalap, Compound.....737
 of Leptandrin, Comp. 738
 of Lobelia, Compound 738
 of Podophyllin, Comp. 738
 of Quinia, Compound 738
 of Rhubarb and Potassa,
 Compound.....738
 of Xanthoxilin, Comp. 738
 Styptic.....666
 Worm.....738
 Powders,.....736
 Baking.....696
 Seidlitz.....697
 Soda.....696
 Yeast.....696
 Pox,.....604
 Chicken.....230
 Cow.....228
 Small.....224
 Precipitated Carb. of Iron, 665
 Pregnancy, Capricious Appe-
 tite during.....526
 Constipation during.....524
 Convulsions during.....524
 Cough during.....525
 Cramps during.....366
 Difficulty in Urinating
 during.....525
 Diseases of.....524
 Headache during.....524
 Heartburn during.....409
 Itching of Genitals dur-
 ing.....525
 Pain in the Right Side
 during.....525
 Painful Breasts during 526
 Piles during.....525
 Retention of Urine dur-
 ing.....525
 Suppression of Urine
 during.....525
 Swelling of Limbs dur-
 ing.....525
 Varicose Veins during 525
 Vomiting during.....410
 Preparation of Food,.....34
 Prepared Chalk,.....670
 Preserves,.....75
 Prickly Ash,.....686
 Berries, Tincture of 754
 Compound Clyster of 723
 Prickly Elder,.....687
 Tincture of.....754
 Prim,.....688
 Princes' Pine,.....681
 Privet,.....688
 Prognosis of Febrile Diseases 176
 Prolapsus Ani.....597
 Prolapsus of the Womb, 522
 Protoxide of Iron,.....665
 Prunes,.....66
- Prussian Blue,.....664
 Prussiate of Iron,.....664
 Psora,.....498
 Psoriasis,.....491
 Ptelein,.....694
 Puddings,.....58
 Puerperal Fever,.....305
 Puerperal Mania,.....542
 Pulmonary Balsam, 740
 Pumpkins,.....688
 Punctured Wounds.....554
 Purgatives in Fevers, 177
 Purging off the Meconium, 545
 Purpura Hemorrhagica, 481
 Purulent Ophthalmia, 241
 Infantile.....243
 Pussy Willow,.....634
 Putrid Sore Throat, 247
 Pyroligneous Acid,.....688
- Quality of Food,.....26
 Quantity of Food,.....24
 Quassia,.....688
 Queen of Meadow,.....688
 Queen's root,.....689
 Quince,.....67
 Quinia, Compound Pills of 734
 Compound Powder of 738
 Phosphate of.....681
 Sulphate of.....680
 Valerianate of.....681
 Quinsy,.....245
- Rabies Canina,.....368
 Rachitis,.....479
 Radish,.....62
 Raising Children by Hand, 546
 Raisins,.....68
 Raspberry,.....69, 633
 Rattle root,.....633
 Rectum, Stricture of.....600
 Red Cedar,.....689
 Chickweed,.....689
 Clover,.....689
 Currants,.....67
 Gum,.....549
 Lead,.....668
 Oxide of Iron,.....665
 Oxide of Lead,.....668
 Oxide of Lead Plaster, 736
 Pepper,.....640
 Root,.....689
 Rose,.....690
 Remittent Fever,.....191
 Infantile.....212
 Resin,.....690
 Cerate,.....717
 Plaster,.....736
 Plaster, Compound.....735
 Restorative Wine Bitters, 723
 Retention of Urine,.....440
 during Pregnancy, 525
 Rhatany,.....690
 Tincture of.....754
 Rheumatic Liniment, 724, 745
 Tincture,.....745
 Rheumatism, Chronic.....325
 Inflammatory.....320
 Rhubarb,.....64, 690
 and Potassa, Compound
 Powder of.....738
 and Potassa, Compound
 Syrup of.....740
 and Potassa, Fluid Ext. 720
- Rhubarb, Compound Pow-
 der of.....738
 Compound Tincture of 747
 Ribs, Fractures of.....565
 Rice,.....53
 Rickets,.....479
 Ringworm,.....491
 of the Scalp,.....495
 Roasting,.....35
 Rochelle Salt,.....697
 Roche's Embrocation, 624
 Rock Brake,.....691
 Rock Rose,.....652
 Rosemary,.....691
 Rosewillow,.....701
 Rosin,.....690
 Round-Leaved Pyrola, 691
 Rue,.....691
 Rubbing Sheet,.....763
 Rum,.....92
 Rupture,.....601
 of the Navel,.....550
 Rye,.....53
 Spurred.....649
- Saffron,.....691
 Sage,.....692
 Compound Infusion of 722
 Sago,.....59
 Sal Ammoniac,.....626
 Saleratus,.....685
 Salicin,.....709
 Saline Mixture,.....729
 Saline Wash,.....727
 Salsify,.....62
 Salt,.....71, 696
 Salt of Tartar,.....684
 Saltpetre,.....685
 Salt, Rochelle.....697
 Salt Rheum,.....491
 Salts, Glauber's.....696
 Salve, Black.....736
 Sanguinarin,.....635
 Sanguinarina,.....635
 Sarsaparilla,.....692
 Syrup, Compound.....740
 Sassafras,.....692
 Sauces,.....75
 Sausages,.....39
 Savin,.....692
 Scabies,.....498
 Scald Head,.....493
 Scalds and Burns,.....613
 Scalp, Ringworm of.....495
 Scammony,.....693
 Scarlatina,.....215
 Scarlet Fever,.....215
 Sciatica,.....321
 Scorbutus,.....482
 Scrofula,.....464
 Scrofulous Ophthalmia, 467
 Scrofulous Syrup,.....741
 Serotum, Dropsy of the 343
 Scullcap,.....693
 Scutellarine,.....693
 Scurvy,.....482
 Land.....481
 Sea Sickness,.....410
 Secondary Syphilis,.....607
 Seeds, Oily.....70
 Seidlitz Powders,.....697
 Self-Pollution,.....380
 Seneca Snakeroot,.....693
 Senecin,.....669

- Seneka.....693
 Syrup of.....742
 Senna.....694
 American.....625
 Compound Clyster of.....723
 Comp. Confection of.....718
 Comp. Electuary of.....718
 Compound Tincture of.....747
 Sesquicarbonate of Potassa,.....685
 Sesquioxide of Iron,.....665
 Seven Barks,.....660
 Shallot,.....63
 Sheep Laurel,.....694
 Tincture of.....754
 Sheet, Dripping.....763
 Rubbing.....763
 Shingles,.....491
 Shoulder, Dislocation of.....575
 Shoulder-blade, Fracture of.....561
 Shrubby Trefoil,.....694
 Tincture of.....755
 Sick Headache,.....427
 Sick Room, Fumigation of.....137
 Sickness, Milk.....419
 Sea.....410
 Signs of Disease in Infants,
 External.....548
 Silkweed, Common.....645
 Silver, Nitrate of.....674
 Simple Cerate,.....718
 Dislocations,.....571
 Fractures,.....556
 Incised Wounds,.....552
 Syrup,.....741
 Sinew, Weeping.....589
 Singultus,.....392
 Sitz Bath,.....773—774
 Skin, Diseases of.....491
 Skunk Cabbage,.....695
 Sleep,.....117
 Slippery Elm,.....695
 Small Pox,.....224
 Small Spikenard,.....695
 Smartweed,.....706
 Smoked Beef,.....37
 Snakeroot, Button.....638
 Seneka.....693
 Virginia.....705
 Snakes, Bites of.....555
 Soap,.....133, 695
 Castile.....695
 Compound Pills of.....734
 Soda, Bicarbonate of.....696
 Borate of.....696
 Compound Lotion of.....727
 Hyposulphite of.....697
 Muriate of.....696
 Powders,.....696
 Supercarbonate of.....696
 Sulphate of.....696
 Sulphite of.....697
 Sodium,.....695
 Chloride of.....696
 Solania,.....632
 Solidified Milk,.....44
 Solomon's Seal,.....697
 Solution of Iodide of Iron,.....725
 of Iodine, Compound.....725
 of Potassa,.....725
 Solutions,.....725
 Soot,.....697
 Sore Mouth, Nursing.....540
 Nipples,.....532
 Throat, Clergyman's.....256
 Sore Throat, Inflammatory.....245
 Throat, Putrid.....247
 Soup, Chicken.....42
 Soups,.....43
 Sour Krout,.....60
 Spanish Flies,.....639, 697
 Tincture of.....755
 Spasmodic Cholera,.....412
 Spearmint,.....698
 Spermaceti,.....698
 Spermatorrhea,.....384
 Sphacelus,.....551
 Spider's Web,.....698
 Spigelia and Senna, Fluid
 Extract of.....720
 Spikenard,.....695
 Compound Syrup of.....740
 Small.....695
 Spirit of Ammonia, Aromatic.....744
 of Nitric Ether,.....698
 Vapor Bath,.....698
 Spirits of Hartshorn,.....626
 of Lavender, Compound.....747
 Turpentine,.....676
 Spleen, Chronic Disease of.....299
 Chron. Inflammation of.....299
 Inflammation of.....298
 Splenitis,.....298
 Sponge,.....699
 Bath,.....761
 Burnt.....699
 Spotted Fever,.....211
 Sprains,.....586
 Spruce Beer,.....86
 Spurge, Large Flowering.....667
 Spurred Rye,.....649
 Squill,.....699
 Syrup of.....742
 Vinegar of.....756
 St. Anthony's Fire,.....232
 St. John's Wort,.....692
 St. Vitus' Dance,.....363
 Starch,.....50
 Stewing,.....36
 Stiff Joint,.....585
 Stillingia,.....689
 Compound Liniment of
 Oil of.....724
 Compound Syrup of.....741
 Stimulating Eye Water,.....726
 Stomach, Bleeding from.....455
 Chron. Inflammation of.....281
 Cramp in.....366
 Inflammation of.....280
 Stomatitis,.....248
 Stone,.....444
 Storax,.....700
 Stramonium,.....700
 Ointment,.....730
 Tincture,.....755
 Strangury,.....440
 Strawberry,.....69
 Strengthening Plaster, Com.....735
 Stricture of the Urethra,.....609
 of the Rectum,.....600
 Strong Veg. Caustic,.....685, 716
 Strophulus Intertinctus,.....549
 Strychnia,.....675
 Stye,.....503
 Styptic, Pagliari's.....631
 Styptic Balsam, Warren's.....715
 Styptic Powder,.....666
 Subacetate of Copper,.....645
 Subnitrate of Bismuth,.....632
 Substances in the Windpipe,
 Nose, or Ears,.....615
 Suckling of Infants,.....545
 Sudorific Tincture,.....748
 Sugar,.....50
 Sugar of Lead,.....668
 Sulphate of Copper,.....645
 Iron,.....666
 Iron, Dried.....666
 Magnesia,.....671
 Morphia,.....677
 Quinia,.....680
 Soda,.....696
 Zinc,.....712
 Zinc, Ointment of.....730
 Sulphite of Soda,.....697
 Sulphur,.....700
 Compound Ointment of.....732
 Flowers of.....700
 Liver of.....686
 Sulphuret of Potassium,.....686
 Sulphuretted Hydrogen,.....47
 Sulphuric Acid,.....700
 Sumach,.....701
 Poison.....683
 Summer Complaint,.....423
 Sunflower,.....701
 Sunpain,.....186
 Suppressed Menstruation,.....509
 Suppression of Urine,.....438
 during Pregnancy,.....525
 Surgical Diseases,.....551
 Swamp Dogwood,.....701
 Milkweed,.....701
 Sweating Blanket,.....768
 Sweet Fern,.....702
 Flag,.....702
 Gum,.....702
 Sweetmeats,.....75
 Sweet Potato,.....60
 Sweet Spirits of Nitre,.....698
 Swelled Breasts during Preg-
 nancy,.....526
 Swelled Neck,.....486
 Swelling, White.....477
 Swelling of Breasts in In-
 fants,.....550
 Swelling of Limbs during
 Pregnancy,.....525
 Syecosis Menti,.....496
 Sympathetic Bubo,.....319
 Symptoms of Febrile Dis-
 eases,.....173
 Syncope,.....392
 Syphilis,.....604
 Syphilis, Constitutional.....607
 Syphilitic Warts,.....319, 504
 Syrup, Alterative.....740
 Lemon.....741
 Balsam Peru,.....741
 Garlic,.....742
 Ginger,.....742
 Ipecacuanha,.....742
 Partridge-berry, Comp. 739
 Rhubarb and Potassa,
 Compound.....740
 Sarsaparilla, Compound.....740
 Seneka,.....742
 Spikenard, Compound.....740
 Squill,.....742
 Stillingia, Compound.....741
 Tolu,.....742
 Wild Cherry,.....743
 Yellow Dock, Compound.....741

- Syrup, Scrofulous.....741
 Simple.....741
 Syrups,739
 Tacamahac,628
 Tag Alder,702
 Tamarac,625
 Compound Tincture of 748
 Tamarinds,70
 Tannic Acid,702
 Tannin,702
 Tansy,703
 Tar,703
 Tar Plaster, Compound...735
 Tartar, Cream of.....684
 Tartar, Salt of.....684
 Tartaric Acid,703
 Tartrate of Iron and Quinia, 666
 Potassa and Soda,.....697
 Tea,80
 Tea, Beef37
 Tea, Mutton38
 Teeth, Attentions to the...31
 Temperaments,10
 Tetanus,367
 Tetter,491
 Thigh-bone, Fracture of...566
 Thimble Weed,703
 Thoroughwort,636
 Thrush,248
 Thrush, White.....250
 Tic Dolooureux,543
 Tincture, Acetous Emetic 744
 Antispasmodic747
 Golden746
 King's Expectorant...747
 Acetate of Iron,.....749
 Aconite Root,749
 Arnica,749
 Assafetida,749
 Assafetida, Compound 745
 Belladonna,749
 Benzoin,750
 Benzoin, Compound...745
 Black Cohosh,750
 Black Cohosh, Comp. 745
 Bloodroot,750
 Bloodroot, Compound
 Acetated744
 Blue Cohosh, Comp. 745
 Blue Flag,750
 Camphor,750
 Camphor, Compound...745
 Cantharides,755
 Capsicum,750
 Capsicum, Compound...747
 Castor, Ammoniated...744
 Catechu,750
 Chloride of Iron,.....750
 Cinnamon,751
 Colchicum, Compound 746
 Colchicum Seed,751
 Conium Maculatum,....754
 Cotton Bark,751
 Digitalis,751
 Ergot,751
 Gelseminum,752
 Gentian,752
 Gentian, Compound...746
 Ginger,752
 Golden Seal, Compound 746
 Grains of Paradise,....752
 Guaiacum, Aromatic...744
 Guaiacum, Volatile...756
 Tincture of Hemlock,752
 Hemlock, Compound...746
 Henbane,752
 High-cranberry, Comp. 746
 Hyoseyamus,752
 Iodine,752
 Iodine, Compound...746
 Lavender, Compound...747
 Leptandrin,752
 Lobelia,753
 Lobelia and Capsicum,
 Compound.....747
 Lobelia, Compound...747
 Lupulin,753
 Muriate of Iron,750
 Musk,753
 Myrrh,753
 Myrrh, Compound...747
 Nux Vomica,753
 Opium,753
 Opium, Camphorated...744
 Podophyllin,754
 Poison Hemlock,754
 Poke,754
 Prickly-Ash Berries, ..754
 Prickly Elder,754
 Rhatany,754
 Rhubarb, Compound...747
 Senna, Compound748
 Sheep Laurel,754
 Shrubby Trefoil,755
 Spanish Flies,755
 Stramonium,755
 Tamarac, Compound...748
 Tolu,755
 Toxicodendron,755
 Virginia Snakeroot, ..748
 White Hellebore,755
 Yarrow,755
 Rheumatic745
 Sudorific.....748
 Tinctures,743
 Tinea Capitis,493
 Toast Water,79
 Toasted Bread,58
 Tobacco,703
 Toes, Dislocations of...578
 Tolu, Balsam629
 Syrup of743
 Tincture of755
 Tomato,62
 Tongue in Fevers,182
 Tonsils, Enlarged488
 Toothache,32
 Tooth Washes,32
 Towel-bath,761
 Trailing Arbutus,703
 Compound Infusion of 722
 Treatment after Delivery, 532
 Treatment in Fevers, Auxil-
 iary.....180
 Trichosis Furfuracea,....495
 Trisnitrate of Bismuth, 632
 True Labor Pains,529
 Tulip Tree,703
 Tumors,598
 Turkey Corn,704
 Turn of Life,515
 Turner's Cerate,717
 Turnip,61
 Turnip, Indian.....662
 Turpentine, Spirits of...676
 Venice705
 White707
 Turtle,43
 Twin Leaf,704
 Tympanites,428
 Typhoid Fever,207
 Typhoid Pneumonia,273
 Typhus Fever,204
 Ulcerated Nipples,533
 Ulcerated Sore Mouth,250
 Ulcerative Inflammation of
 the Mouth,250
 Ulcers,590
 Umbilical Hernia,550
 Unicorn Root,704
 Unicorn Root, False658
 Upper Arm, Fracture of...562
 Urate of Ammonia Deposits, 449
 Urethra, Inflammation of...315
 Strictures of the609
 Uric Acid Gravel,445
 Urinary Organs, Diseases of 432
 Urination, Difficulty of dur-
 ing Pregnancy,525
 Urine, Bloody456
 Incontinence of.....442
 Retention of440
 Retention of during Preg-
 nancy,525
 Suppression of438
 Suppression of during
 Pregnancy,525
 Uroscopists,154
 Uva Ursi,704
 Vaccination,228
 Valerian,704
 Compound Pills of....734
 Valerianate of Bismuth,....632
 Morphia,677
 Quinia,681
 Vapor-bath,769
 Vapor-bath, Spirit698
 Varicella,230
 Varicose Veins during Preg-
 nancy,525
 Varioloid,226
 Veal,41
 Veal Broth,41
 Vegetable Acids,71
 Vegetable Caustic, Mild 685, 716
 Strong685, 716
 Gilbert's464
 Vegetable Diet,49
 Vegetable Gluten,49
 Vegetable Oyster,62
 Vegetable Poisons,616
 Venereal Disease,604
 Venereal Warts,319, 504
 Venice Turpentine,705
 Venison,38
 Ventilation,16
 Verdigris,645
 Verruca,503
 Vertigo,393
 Vervain,705
 Vine, Poison683
 Vinegar,72, 705
 Vinegar of Lobelia,756
 Vinegar of Squill,756
 Vinegars,756
 Virginia Snakeroot,705
 Compound Tincture of 748
 Vitriol, Blue.....645
 Elixir of.....748

Vitriol, Green.....666	White Hellebore Ointment, 730	Worm Powder.....738
White.....712	Tincture of.....755	Worms,.....429
Volatile Tinc. of Guaiacum, 756	White Indian Hemp,.....701	Worms in the Skin,.....501
Vomiting,.....410	Liniment,.....725	Wormseed,.....709
Vomiting during Pregnancy, 410	Liquid Physic,.....729	Wormwood,.....709
	Oak,.....706	Wounds,.....552
	Pond Lily,.....707	Contused,.....554
Wafer Ash,.....694	Swelling,.....477	Gunshot,.....554
Walnut, Black.....638	Thrush,.....250	Lacerated,.....554
Warm and hot Fomentations, 776	Turpentine,.....707	of Arteries,.....553
Warm Bath,.....132	Weed,.....707	Poisoned,.....555
Warren's Styptic Balsam, 715	Vitriol,.....712	Punctured,.....554
Warts,.....503	Whites,.....518	Simple Incised,.....552
Warts, Venereal.....319, 504	Whitlow,.....588	Wrist, Dislocation of.....578
Wash, Alkaline.....726	Whortleberries,.....67, 707	Fractures of.....565
Wash, Cooling.....726	Wild Carrot,.....707	
Wash-down,.....761	Cherry,.....708	Xanthoxylin,.....687
Wash, Saline.....727	Cherry, Syrup of.....743	Compound Powder of.....738
Wash-tub Bath,.....762	Ginger,.....708	
Washes,.....726	Indigo,.....708	Yam, Wild.....708
Washes, Tooth.....32	Indigo Ointment,.....731	Yarrow,.....710
Washing the Child,.....545	Yam,.....708	Tincture of.....755
Water,.....76	Willow,.....709	Yaws,.....484
Barley,.....52	Black.....634	Yeast,.....710
Brash,.....407	Pussy.....634	Yeast Powders,.....696
Camphor,.....727	Rose.....701	Yellow Dock,.....710
Hemlock,.....683	Windpipe, Chronic Inflam-	Compound Syrup of.....741
Lime.....670	mation of.....264	Yellow Fever,.....199
Melon,.....706	Inflammation of.....262	Yellow Gum,.....549
Pepper,.....706	Substances in.....615	Yellow Jessamine,.....710
Toast.....79	Wine,.....88	Yellow Ladies' Slipper,.....711
Waters, Artificial, Mineral, 80	Wine Bitters,.....728	Yellow Parilla,.....711
Medicated.....727	Wine Bitters, Restorative.....728	
Wax,.....706	Wine of Comfrey, Comp. 728	Zinc, Chloride of.....711
Wax, Bayberry.....630	Golden Seal, Comp. 728	Compound Lotion of.....726
Weaning the Child,.....547	Wines, Medicated.....728	Impure Carbonate of.....711
Weeping Sinew,.....589	Wintergreen,.....709	Iodide of.....711
Weights and Measures,.....712	Witch Hazle,.....709	Mild Ointment of.....731
Wens,.....598	Womb, Bleeding from.....534	Ointment of Oxide of.....730
Wet Compresses,.....778	Falling of.....522	Ointment of Oxide of,
Wet Girdle,.....778	Hemorrhage from.....534	Compound.....731
Wet Nurses,.....546	Inflammation of.....311	Ointment of Sulphate of 730
Wet Sheet Pack,.....776	Prolapsus of.....522	Oxide of.....711
Wheat,.....51	Women, Diseases of.....506	Sulphate of.....712
Whey,.....80	Woodsoot,.....697	
Whisky,.....93	Woodsoot Ointment,.....731	
White Hellebore,.....706		

FINIS.

